

MASSACHUSETTS PLOUGHMAN



VOL LXII. - NO. 23

BOSTON, MASS., SATURDAY, APRIL 4 1903

WHOLE NO. 3192

MASSACHUSETTS PLOUGHMAN
NEW ENGLAND JOURNAL OF AGRICULTURE
Official Organ of the N. E. Agricultural Society.

MASSACHUSETTS PLOUGHMAN PUB. CO.
Publishers and Proprietors.
ISSUED WEEKLY AT
NO. 3 STATE STREET,
Boston, Mass.

TERMS:
\$2.00 per annum, in advance. Single copies 5 cents.
All persons sending contributions to this journal, or for use in its columns, must sign their name, and for use in its columns, must sign their name, and for use in its columns, must sign their name.
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The New Orchard.

The young fruit grower may well do a little hard thinking over the Powell ideas in orchard culture. While none of the points are in themselves strictly new, they come with especial force because they are largely new as applied to orcharding, and because the results have proved to be fully up to expectations.

Perhaps the most striking passage of Professor Powell's address, as reported in these columns, is the reference to the grand work done by clover in holding water and in filling the soil with nitrogen. Every orchardist knows the trouble occasioned by tendency to drought as soon as the soil is fully used, and he knows it will not do to soil the land down again. He knows also that no single element will give as much growth as nitrogen, which, however, comes high in the market form. But here is a soil kept full of decayed matter to soak up moisture, and also in three years dressed with 1350 pounds of nitrogen, worth ten cents a pound, or \$135. Truly an enormous result for some clover sowed late and plowed early.

Speaking of clover, it should be called to mind that the common red variety will give best results, where the crimson will not live over winter. A Massachusetts orchardist, who has tried red clover in his young orchard, says it can be plowed under with common plow and a horse in early spring and only a very little need be left between the trees. He finds the results so far all that are claimed, but advises that the clover be not allowed to get too rank before plowing, or the mass of sour green matter in the soil may be too great for best results.

A word may be said to young men starting their first orchard this spring. Let him size up the situation first, and plant no more trees than he may be reasonably sure will get good care from start to bearing. A large percent of trees set are soon neglected and amount to nothing. He should choose only a very few varieties, and those that he knows all about them. It pays to buy good trees, and these are not usually the very cheapest. The soil should be well prepared with plenty of plant food from previous crops. Set the trees in straight rows and by a systematic plan. The effect of a good start goes a long way.

More of the Clark Ideas.

The recent articles on the Clark system appear to have raised new interest in the subject. As one farmer observes: "If we can get so much fertility out of the soil by stirring it often, then one problem of farming is solved." To round out the subject here completely Mr. Clark has prepared the following article, which includes the substance of his recent address to farmers at Auburn, Pa., and also answers a number of recent inquiries.

The more we stir the soil the better the crop. Intense cultivation is necessary for large crops of any kind. Hay in this country is annually worth millions more than corn, cotton, wheat, and rye combined. Fifty years ago it was worth \$2,000,000, now it is nearly ten times as much. Science or something must have stepped in to help keep the supply. I have personally answered more than twenty thousand letters in the last two years concerning grass culture. It requires many years of careful thought to learn facts in any science, especially when contending with the earth and elements. We feel our way along years before we are sure of anything.

But why seventeen years in the harness, I may begin to feel sure of some facts. One is, that intense cultivation is necessary to move the earth in my fields in two months before seeding at least fifty times, six inches deep, back and forth, up and down, over and under, and at the same time keep the surface true. Why? To cultivate to a given depth. Again, this process reduces the soil, or other vegetation, to plant food, and kills out foul germs and lets in sunshine. This is intense cultivation.

Some of us must have humus. But if we cultivate enough the humus will take care of itself. This method gives the grass the extra I have heretofore explained, is not expensive with up-to-date tools, the work cost less than \$2 per year per acre. We will talk about worn lands. If we will work ourselves, and make our horses work with good tools we will soon work new land into the soil. We should all work and learn to love work. It is not only honorable but we must work to have life, health and prosperity.

My object in this talk on grass culture is to show you one and all that if we pull together we can make money on the farm. I want to make the young men and women

stay on the farms. It is an honor to be a farmer. All the good Government lands are taken up. There is no better land in the world than right here. The hue and cry has been, go West, but that is past. You would better stay here. Most of the old farms are large enough to divide. You better stay with your friends; you can make money and also remain with them. It is not necessary to have a large amount of land to make large money. Most of us are land poor. There are thousands of money-making farms in this country of less than ten acres. As a rule, the small farms make the most money. Look at the large returns of the truck gardener. Intense cultivation does it.

Redtop and timothy when sown together will produce 1 1/2 tons per acre more hay than when sown by themselves. These grasses work well together and should be reseeded once in five or six years. They should be sown Sept. 1; that is the time they would reseed themselves. All of the seed on a section should be sown and completed the same day. Why? Because the seed must all start together. I sown fourteen quarts of each kind of seed to the acre, between lines 8 feet apart, and a definite amount of seed to each four rods. Half of each kind is sown each way. No other seed should ever be sown with them. It takes ten months from seeding to produce a crop of grass; forty days from the following May first.

With intense cultivation, a drought rarely, if ever, hurts the first crop. The time to cut any kind of grass is when half the heads are in blossom. Two fine days will cure six tons or more of hay to the acre. With bad weather, no one can tell. Use all the yard mowers you can get before seeding, but after seeding use nothing but bone, muriate of potash and nitrate of soda, or their equivalent. Thereafter fertilize every crop whether first or second. Bone makes body, potash strength, and soda is the driver.

I always heap my hay when hot, say from 2 to 4 P.M. Hay should be evenly packed in the mows, especially if the mows are large. The second crop should be cut just before frost, and the field kept clean for winter.

Fields well cared for and kept clean will never winter-kill. Grass fields should never be pastured. You can never get as good results by fertilizing old fields. No animals of any kind should ever stand, stamp, drop material, or otherwise do anything to kill out the stand. No part of the grass stand can ever be recovered except by reseeding.

Keep your grass fields in every way as clean as a garden. Eternal vigilance is the price we pay to get the best results in grass culture or any crop. Among my correspondents there are numbers who have adopted my methods of grass culture, and in some cases they have produced larger crops than myself. A great many have reported five and six tons and more first crop of dry hay to the acre; some as high as seven tons, and in one case over eight tons. My first experimental crop on sixteen acres was over sixty-four tons, and for many years the same field in two crops produced over one hundred. On one flat section of several eighths of an acre, covered with clay-gravel hard-pan, no vegetation on it, from one seedling, lasting thirteen years, twenty-six crops produced 104 tons. A section of five-eighths of an acre in two crops this year gave a rate of 21,400 pounds per acre. Not a year in the seventeen but what some one, or more acres in my field have produced more than six tons, sometimes over seven tons, but there never has been a year in which the field has not produced more than six tons to the two crops. That is not due to favorable conditions to start with. It is due to better fertilization, intense cultivation and care. The outside cost of hay produced by this method does not exceed \$2 for labor and \$3 for fertilizer; total cost per ton for well-dried hay in the barn, \$5. A word more in relation to intense cultivation.

A five-acre section of 1425 plum trees was grown without any fertilizer whatever. The average growth in four years, or over three hundred feet to each tree this year, with a product of 1500 large baskets of very large plums in the last two years, and without any fertilization. I have used nothing upon this field except the double-action cutaway harrow six times a month for three months each year. That was the intense cultivation given it which produced the result.

A portion of my field remains as it was originally and not a ton of vegetation has annually grown on an acre in fifty years. That was the kind of land to start with. There is no poorer land in the country. I wish you would come and see it. If you do you will agree with me that intense cultivation and care will work wonders.

Mr. Samuel T. Earle of Centerville, Md., writes Feb. 4: "Your system of intense cultivation is working wonders on my land. We had an inane last week. A lecturer from Ohio told us of one hundred acres of wheat he saw last season which, from intense cultivation, gave fifty bushels per acre. The effect on my land is perfectly marvelous. I would like to have you walk over my land with me. I have found that all it needs is proper cultivation." I have hundreds of similar letters. They make me feel better for living in this age and time.

Success Under Difficulties.

Five years ago there came to the city a man who had been a farmer and country merchant in a neighboring State. He brought a few hundred dollars with him and lost it trying to keep a store in a suburb. He got sick and was cared for by some people who knew him, and on recovery had not a dollar nor a relative in the State. He was sixty years old, and one foot was disabled. He had before him visions of the poorhouse, or a walk back to his old home. He thought the matter of his future was a

plain down grade to a poor relation's grave. The story of his subsequent fortune is told in the Journal of Agriculture.

Just at this juncture a man whom he had known in the past invited him to spend a week with him in the country. He went, and the pure air and the rest put hope in his heart, and he proposed to care for the cattle and the fowls on the place for his board, and the offer was accepted. He worked all that winter on these terms. At night the old man, whose name may be called John Jones, plaited some door-mats of shucks for the house and a large one for his own room which had no carpet. He could not read by lamp-light and continued to plait mats of shucks and grass, and found that he could sell them readily in the city. When the spring work began Jones had \$45 in small money saved from his mat sales. He resolved to try for himself again and rented some land near his friend and stocked it with fowls and hogs. He continued to feed his friend's stock for his board, and worked

and his wife, who wanted to cultivate the land, and last year the old, worn-out patch looked like a prosperous farm. The gullies were filled, and potatoes and garden stuff were raised in abundance. The whole place was alive with fowls, and a pretty herd of cows ranged the country near the farm. The year has been a good one, and Mr. Jones has no debt, has some money, a good horse and buggy, and while a little more gray and a little more lame, does not have any fear of the almshouse, for he could easily sell his belongings for \$200, and it produces for him more money than he needs and every comfort and good health.

Now that is more easily written about than making the living—but it shows that industry and economy will bring their reward.

Garden Seeds Costly.
"Farming will cost something this year," observed a farmer, after noting the quotations for grass seeds. All kinds, nearly, of



BRICKLY COMFREY.

a small crop of his own of vegetables and potatoes. He paid his rent and had \$115 when winter began and felt rich. He bought forty acres of land, twenty acres of it already cleared and worn out, for \$200. There was a fence, but no house, a good well and some peaches and plum trees in healthy condition. He bought the land at \$600 cash and the balance in one or two years.

With his own hands Mr. Jones built a chicken house, a stable and pig lot, all of chicken poles, during the winter, and worked for his friend as usual. His foot never got well, and he hobbled the mile between the two places back and forth. He made a little money with the fowls and hogs, his door-mats and baskets, plaited of shucks and grass. The baskets were so thick that eggs could be kept in them in the winter without freezing. He bought some lumber and helped a "saw-and-batchet carpenter" to build him a one-room cabin on his land, which cost him \$28. With a little more than \$50 in cash he moved to his new house, using a shelf for a bed, and with \$6 worth of furniture and cooking utensils, he went to work for himself full of hope and energy.

He had no remarkable success, but he had food for the winter and nearly \$200 on the first of October. When his next note for his land fell due, he paid both notes, made his room more comfortable with furniture and utensils, and went to work as usual on his baskets and mats and bought a cow and the horse, both on credit, from neighbors. He killed and sold eleven hogs and got \$32 for them, paid for his cow, worth \$15, and paid \$15 on the debt for the horse, which cost him \$30.

When spring came again Mr. Jones found himself with very little money, but with seed and utensils, fences in perfect condition, and with a calf to sell, butter to sell, fruit looking well, fowls in plenty and twelve hogs and pigs. His horse was his only debt. He could not plow and had to depend on his fruit, berries, fowls, butter and his garden. All did fairly well and the horse was paid for, a comfortable two-room cottage built, two more cows purchased and a pole barn built to hold the potatoes, pumpkins, onions and the hay saved for the winter. There was \$120 on hand in cash. The first cabin was turned over to a man

pled by pigs and crops to feed them. Is not that a wonderful return? One year, some time since, he did ten or fifteen per cent. better than this. During the last fifteen years he has never failed, as he reports, to get at least \$25 an acre, no matter how low the price might be. His last year's pigs are not sold yet. He thinks there is the most profit in selling them when they weigh two hundred to 250, but one of the lots mentioned weighed almost three hundred each on the average. He sells when they are along towards eight months old. They weigh about one and one-fifth pounds for each day they have been kept.

GROWTH AND HEALTH.
This is not a great gain; many have beaten it; but Mr. Henry keeps them growing steadily, largely on cheap pasture, so this moderate gain is made very economically. That is his great point. This also tends to keep the pigs healthy. It is rather a startling fact that while hogs have died of cholera all around him, time and again, he has never lost one single one. He simply uses common sense in the breeding and care of pigs, pays attention to the simple laws of health, and nature rewards him as she will any one else. There is not the slightest need of hogs dying with cholera, or taking it at all if they are properly bred and cared for.

A BUSINESS PIGGERY.
Mr. Henry uses for pasture for pigs three five-acre lots of very rich ground, lying side by side. The middle one is a permanent pasture, particularly for early green feed, of June grass, white clover and other natural grasses. The pigs run in this every day in the year, having a warm sleeping-room, with a cement floor, under a corn crib in one corner, and an outdoor feeding floor with a tight board fence around it to keep wind off. The feeding floor is some little distance from sleeping quarters, so pigs will leave their droppings on way to feeding floor rather than on it. They are fed out of doors on this floor every day. If snow comes it is shoveled off. One object of this is to have floor where sun and rain can purify it. This helps about keeping pigs healthy. Fresh bedding is put in sleeping-room often, so it is always clean and dry. When pigs sleep on wet bedding there is a loss of at least twenty per cent. of the food they eat that goes to make heat and force.

He uses little individual pens for the sows to farrow in. They are 8x12 bottom, the frame being 2x4s spiked together. Then a gable roof is made of boards six feet long, using a 2x4 at top to nail boards to. Board up back and put a fender pole across inside to protect little pigs; none needed on sides. Board front down from top to with about two feet of ground. They cost less than \$2 each. These are placed on the ground in dry places in permanent pasture. A sow will pick out her pen at farrowing time and stay in, or about it, for some weeks, with her young ones. The little pigs can get out on the ground from the first day and run about. This is the great point (better health) in connection with the very low cost of pens. A little straw is placed in each one. Remember, pigs do not come until mild weather, when they can run out. In case of a bad storm two men can turn pens around back to wind.

His average losses of young pigs with this system are less than one pig to a litter. It is a cleanly, natural system, and still very cheap and little trouble. In due time the sow takes her young ones to the large, light, dry sleeping quarters. This room is so warm in winter that pigs never pile up.

CROPS FOR A PIG FARM.
On one side of the permanent pasture Mr. Henry has, each year, a red clover pasture, and on the other a corn field, each five acres. Clover seed is sown in the corn at the last working, a full peck. In fifteen years he has never failed of getting a good stand. The corn is removed, but stalks left standing. No pigs are ever allowed on the young clover the first fall. The stalks hold the snow. The very rich soil helps to secure a stand. The land is too rich for small grain, hence this rotation with, and seeding in, corn. An enormous crop of corn is grown, as land has become very rich from the droppings of pigs for years. In the spring, early, Mr. Henry sows now about five pounds of Dwarf Essex rape seed per acre, right on this young, new-seeded clover. Frosts and rains cover it. The plants grow up along the corn rows, where clover did not take well, and work in wherever there is a chance among the clover plants. The result is a mass of feed, clover and rape, enough to carry the stock all summer, till connection with the grass pasture and needed grain. When pasture gets ahead of pigs, either the grass or clover, he mows it off so it will start up fresh. Some years mowed was saved for hay, but the clover could not be on account of the rape in it, which would not cure out. Mr. Henry had intended to add another field to his rotation for pasture, and sow rape alone, but this clover and rape together he now thinks better. You understand that a clover and rape field is used one year only for pasture, and then is plowed for corn the next season, and the last year's corn field becomes the pasture that year.

You notice ten acres are used for pasture each year, then the corn from forty acres is used to feed pigs, and the oats and pumpkins raised on about ten acres more, making sixty acres altogether. Mr. Henry has more land, of course, and rotates clover, small grain and corn, so corn is not grown on same land each year, but the products of sixty acres only go to the pigs. A small field of heavily manured land is put in pumpkins each year, grown alone, not with corn. This helps keep pigs healthy and corrects the effect from corn feeding. They eat a double box load per day. The pigs are fed a growing ration at first, as has lately been described; no corn.

A small dairy is kept to supply skimmed milk for pigs. The cost of this is more than offset by the corn stalks that the pigs do not eat. To furnish the earliest pasture for next spring, in this latitude, where one hasn't clover, Mr. Henry advises sowing a bushel of barley and five pounds of rape seed per acre. Make two sowings, say three or four weeks apart. Turn pigs on rape while it is small, or they won't eat it. Rape makes a good early pasture, but does not last long; soon gets tough. Mr. Henry uses the common red clover. His methods would all work well in New Hampshire. The same crops could be grown, and certainly some crops could be grown, but one litter a year. If a sow raises but one litter they can run with her longer, and will be stronger, and need not come early, and danger from cholera is much less. A fall litter in the North must be fed on costly grain and dry feed; no money in it.

Our readers will find above a brief outline of one of the best systems of growing pigs successfully. The two friends named can certainly find answers to their questions in this article. A man with small means can go into pig raising in this way, because the cost of buildings and stock to start with is small. Get some good breed and a pure-bred sire. Keep the sows some five years, or so long as they raise good litters. The same with the male. Breeding from immature stock year after year, and inbreeding, is one cause of lack of vitality that allows cholera to get a foothold. Don't cross breed or be changing around, but stick to the one good breed. Mr. Henry has Poland Chinas. There are other good breeds.

Eggs Lower.

Receipts of eggs have been very heavy at New York and Boston lately, and prices have declined sharply. Dealers seem to think prices are down to stay, and are preparing to buy for storage, April eggs being preferred for that purpose, as being cheap and at the same time most free from effects of frost or pest. It is reported that some purchases will be made the first of the week by Boston dealers who wish to store for their own trade. The grade desired is now selling at 15 to 16 cents. A special grade is packed for storage, the smalls and dirties being taken out.

There are eggs in Boston which sell considerably above the best regular quotation. These are the products of certain nearby poultry farms, and are large, uniform, clean, and mostly brown in color. Dealers guarantee them, and charge 5 cents more or less above the market.

Hay Trade Steady.

The condition of the leading markets is considered favorable for the time of year. Supply and demand are pretty well balanced and the general level of prices maintained. The season, as a whole, has proved remarkable. At the outset the problem was to dispose of a big crop of more or less inferior hay at satisfactory prices, and so far this has been fully accomplished. The average quality was never poorer, while the average price has been along the top level right through the winter. There is plenty of chance for trouble yet, however, since the quantity of low-grade stock on hand is still very considerable, and too much of it on the market at one time might clog the machinery of demand which hitherto has worked so actively. Concerning the top grades no anxiety need be felt, as their scarcity insures their sale at firm prices whenever offered.

At New York receipts were about 8400, or slightly above last week's record. The market is practically unchanged, with top grades firm and low grades selling slowly. Liberal quantities of cheap hay are being exported. Rye straw is more plenty and lower. Receipts at Boston have been rather heavy, but mostly No. 2 and poorer. Prices are unchanged. Western and Southern are active, with arrivals ample in most cases. At Montreal the market is quiet, with no surplus.

The following table shows the highest prices as quoted in the Hay Trade Journal for hay in the markets mentioned: Boston \$19.50, New York \$21, Jersey City \$21, Brooklyn \$20, Philadelphia \$19.50, Pittsburgh \$18.50, Pittsburgh prairie \$10, Buffalo \$17, Kansas City \$12.50, Kansas City prairie \$9, Duluth \$11.50, Duluth prairie \$11, Minneapolis \$12, Minneapolis prairie \$11.25, Baltimore \$20, Chicago \$14.50, Chicago prairie \$12, Richmond \$20, St. Louis \$18.50, St. Louis prairie \$10.50, Cincinnati \$17.25, Nashville \$19, New Orleans \$20.50, New Orleans prairie \$11, San Francisco wheat hay \$14, Washington \$18.50, Montreal \$9.50.

Wool Active, but Prices Weak.

The shipments of wool from Boston to date from Dec. 31, 1902, as stated by the Boston News Bureau, are 29,585,192 pounds, against 28,621,505 pounds at the same date last year. The receipts to date are 46,027,322 pounds, against 49,686,233 for the same period last year. The market is rather more active. Prices have weakened on medium wools, with freer sales in consequence. Scoured pulled wools, notably B super at 40 cents for choice, have sold very freely. Missouri one-fourth blood combing has been offered, delivered in Boston, as low as 22 cents this week. Choice Ohio wool of this grade has been sold at 23 cents. New South American crossbreds are arriving and selling at 27 cents, for one-fourth blood, costing a cent or two less the scoured pound than domestic wool of the same grade. The imports to the United States are not over 12,000 bales, barely a third of last year's imports. The attendance of buyers in Boston this week is the largest in months. New clip Arizona wool has been opened in Boston at 45 cents clean for fine medium.

The Horse.

Horse Markets Active.

Demand for horses of all standard grades seems unusually active everywhere, and the average of prices has risen within a few weeks. Business horses, farm and draft animals are called for largely. There is also a good market for roadsters and trotting stock of high grade.

Of this last class a dealer says: "The trouble is with the supply. We know what we want, and so do our buyers, but it is practically impossible to get enough horses to fill the bill. Fair business is being done in horses of medium character, but the best are in the hands of men who have to be tempted to sell. Prices are consequently away above those of last year, and there is little hope of any change in the situation in the near future. The demand is growing because the leisure class is increasing. The supply is short because several years ago breeders stopped breeding on account of the panic and consequent low prices. Animals worth \$2000 today were sold then for \$200. Foreign buyers snapped them up. Then came an abnormal demand in this country, until the supply of really sensational horses became exhausted. The export trade is small now simply because we have not sufficient good harness horses in this country to supply local wants, and we can get better prices right here for high-class carriage horses than the foreign agents will pay. There is no other country that we can call upon for supply. There is the situation in a nutshell." The dealer urges the farmers to breed such stock and compete with the unreasonable prices asked by wealthy owners of fancy stock farms.

One of the best-known buyers of sensational horses, W. H. Louke of New York, expresses himself as "afraid that in a few years the trotting-bred high stepper will become extinct unless the United States Government inaugurates some system for the preservation of the type. What with horse-show enthusiasts paying abnormally high prices for high steppers, it is found that trotting-bred stallions, heretofore kept for the production of speedy trotting stock, are more valuable if sent to the show-ring market. Such horses have been cleaned out of the breeding districts, or practically so. As many as twenty stallions have been converted to heavy harness in a month. Mr. Louke finds the quality of stock now on the trotting farms of mediocre character as compared with the material heretofore available. Like many other horsemen, he advocates the placing of sires at nominal fees about the country by the Government. The plan has been found advantageous in France and other countries. If something of the sort is not quickly resorted to, the trotting-bred type of carriage horses will become as extinct as the old-fashioned Morgans. The trotter of the racing type can take care of itself. What is requisite is the preservation of the handsome type of trotting-bred carriage horse."

Bicyclists soon learn that sand or mud is as bad as a hill. The situation is not quite the same with a wagon, but a rise of one foot in ten doubles the draught, and an average stretch of sand or mud produces about the same effect. Wide tires save power on soft roads. Large wheels save power on rough roads.

It is a good sign when a driver talks frequently with his horses.

A good horseman and a good horse commonly go together, and neither will have much need of a whip.

No engine power without fuel and no horse power without food. The horse can show no more energy than is given him in his food.

One of the best "powders" for a horse a little out of condition is a daily feed of bran to which is added half a pound of flaxseed. It will loosen the bowels and put shine on the coat.

Notes from Washington, D. C.

The new agrostologist of the Department of Agriculture, Prof. W. J. Spillman, has a series of maps from Census Office figures showing the distribution of hays, clovers and green feeding stuffs over the United States. Clover and timothy are found generally in the East, and alfalfa in the West, where also considerable barley and wheat are cut for hay. The most striking feature of the exhibit is the small amount of hay of any kind produced throughout the entire South. "A tremendous transformation must come before the South will again become agriculturally rich," said Professor Spillman. "Cotton was once a profitable crop, but it has come to the point now where farmers are losing money on this crop, no replenishment of soil fertility is practiced, even the cotton seed is shipped away, and they are selling their farms with their crops. The hope of the South lies in raising live stock and growing more grasses and cow-peas. The natural soil conditions throughout much of the South are excellent, but the land has been worn to a thread. Compare Illinois and Georgia. The concentration of crops on the regular Georgia farms, not the truck farms alone, but on the field crops, commercial fertilizers are used in enormous quantities—to as great an extent as in any State, and yet the general run of farmers are losing rather than making money. Illinois, on the contrary, uses almost no commercial fertilizer. She raises live stock and grows grasses and clovers, and her land is growing so rich that wheat breaks down."

Professor Spillman succeeds Lamson-Scribner as agrostologist of the Department of Agriculture, who was sent to the Philippines in charge of the Government Experiment Station. Professor Spillman comes from Pullman, Wash., where he worked along Government agricultural lines for some eight years. Pullman is situated in what is known as the Palouse country, the great wheat section of Washing-

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AMERICAN HORSE BREEDER.

ton. The best farmers of the Palouse, Professor Spillman says, average about forty bushels of wheat to an acre without irrigation. In fact, this yield is produced with only twenty or twenty-two inches of annual rainfall. Good crops of wheat are raised on as little as twelve inches. Professor Spillman himself raised 8-10 bushels per acre, land measured and wheat weighed. The Palouse country, however, has an extremely fertile soil formed from overflow lava beds. No soil, it is said, exceeds in fertility disintegrated lava, and there is practically no bottom to this soil. In one place the Snake river has cut through this lava five thousand feet, forming a gorge hardly second to the Grand Canyon of Colorado.

The Department of Agriculture has issued a pamphlet summing up the results of an experiment by the Wisconsin station, showing that the claim that a nurse crop is necessary for grass and clover sowing is without foundation. There is no need whatever for sowing oats, barley or any other grain with grasses for the purpose of yielding shade and protection. "Young grass and clover plants are not injured by direct sunlight and heat more than other plants of our fields." The experiments, made over a series of years, show that grasses and clover sown by themselves on properly prepared soil spring up at once and make rapid growth, bearing seed heads the same season. The objection that weeds will spring up can be overcome largely by running a mower over the field when the weeds are about eight inches high, setting the cutter bar so that the tops of the weeds are cut while the grass plants are not hurt. Soil, however, to be planted in this way should be fairly free from weed seeds. It is recommended to sow seed early in the spring. Experiments similar to the above have also been carried out in New Jersey, where the seed was, however, sown in the fall. In either event a very fine tilth is essential to a good stand.

The definition given by the Department of Agriculture for protein (nitrogenous matter) in food is "the name of a group of substances containing nitrogen. The protein furnishes the materials for the lean flesh, blood, skin, muscles, tendons, nerves, hair, horns, wool, the caselin of milk, albumen of eggs, etc. It is one of the most important constituents of food stuffs." The albuminoids are included under the general head of protein. The albumen of the egg is a type of albuminoids. The carbohydrates in food and feed stuff form the antithesis of protein. While protein produces muscle and bone, carbohydrates produce fat or fuel for the working of the body. The most important and common carbohydrates are sugar and starch. What the farmer is interested in is getting a properly balanced ration, with sufficient of protein and sufficient of carbohydrates to insure the best digestion and growth.

Canadian farmers are making arrangements to enter into cattle raising on a large scale, according to Robert T. Garrett of Omaha, who was a caller recently at the Department of Agriculture. A number of Canadians, he said, have visited Omaha recently to purchase stock. They are buying cows in large numbers and shipping them to Dominion ranches. Many carloads of Hereford cattle have already been shipped and more are to follow.

Upon the temperature of milk depends the rate of growth and propagation of bacteria. When milk is cooled to 50° or less, growth is very slow and some bacteria do not multiply at all.

Exports of breadstuffs for February were \$17,039,000, against \$11,208,000 for February of last year. Exports of cattle and hogs for February were \$2,536,000, against \$1,807,000 for February a year ago, and exports of meat and dairy products were \$13,366,000, against \$12,835,000 for February, 1902.

The commercial fertilizer used annually

in the United States amounts to between \$40,000,000 and \$50,000,000. Most of the States have provided for official inspection of fertilizer to protect the farmer from fraud. The heaviest applications are made in the Southern States. In some of the prairie States hardly any commercial fertilizers are sold.

Cotton exports, according to the Treasury figures, appear to be bringing the Southern farmer a record-breaking amount of money. The February exports amounted to \$37,423,000, against \$24,708,000 for February of last year, \$22,320,000 for February, 1901, and \$30,848,000 for February of 1900. For the eight months of the fiscal year ending with February, 1903, the exports were \$243,000,000, against \$231,000,000 in the corresponding eight months of 1902, \$237,000,000 in 1901 and \$164,000,000 in 1900. In these eight months of 1898 the exports were a little in excess of those of this year, being 5,671,543 bales, against 5,529,386 bales in 1903, but the value was only \$172,267,000, against \$243,000,000, as shown above.

The Secretary of Agriculture has issued an order calling attention to the prevalence among horses in certain sections of Nebraska and South Dakota of infectious venereal disease known as *maladie du coit* and prohibiting interstate shipments of any horses so affected, unless they shall have been inspected by the Bureau of Animal Industry. Orders have also been issued requiring the castration of all stallions running at large on the Pine Ridge and Rosebud Indian reservations and the quarantine of other stallions, the idea being to prevent the spread of the disease and breeding among horses which may have it. Department officials are authorized to quarantine and condemn and slaughter any horses necessary to the stamping out of the disease, the owners to be remunerated in case of slaughter.

Texas farmers are being stirred up to a point where dairying on a large scale will soon be another of the thriving industries of the Lone Star State, according to F. T. Rawlins of Austin, a recent visitor at the Department of Agriculture. "Our farmers," he said, "are just beginning to appreciate our natural conditions for successful dairying, and that we have the whole world for a market. Southern cottonseed meal goes to Denmark and is fed to the cows in that country, and the butter made there is sold in the English market in competition with that made in the United States. Now our farmers have gotten it into their minds that if the Danish farmers can afford to buy Texas cottonseed meal and make butter to sell in England at a profit, there is no reason why they should not go extensively into the business and use their own cottonseed to feed their own cows and sell their own butter in the United States and other foreign countries."

So long as American farmers sell the rough products of the soil to other people to be worked up into finished products, they are dividing the profits which they should themselves reap, and are also taking fertility from their farms which they should keep in the soil. The practice of feeding grains and other crops on the farm and shipping the finished product, whether it be beef, mutton or hog meat, or butter or cheese, is one which Secretary of Agriculture Wilson has urged at various times as absolutely necessary to the upbuilding of American agriculture.

"It is time and it has been time for some time," said Secretary Wilson, in speaking of the "run-down" farm, "that our farmers who are selling stock feed off the farm and shipping it abroad, should get it into their heads that it will pay them better to keep it at home and feed it. Every one will admit the wisdom of this, and yet thousands of our farmers continue the practice of selling everything they raise, and do not think out any better plan. But we must keep the fertility in our farm lands if we would remain agriculturally supreme. Instead of

this entire area are getting poorer and poorer. Keep the farm crops on the farm and ship the meat and the butter and milk and cheese. That is the thing to do.

"Now, as one instance, American cheese and butter ought to go abroad, and we have had men out trying to find a good market for it in foreign countries. Our farmers can make the best and cheapest butter and cheese of any country in the world, but what have our agents found? Why, in the matter of dairy products, one class of American farmers is furnishing the very weapons to enable foreigners to defeat other American farmers, with distinct loss to both classes of American farmers. We find European markets supplied by Danish butter and cheese. Yet, as I have often said, the Danes could not export a single cheese or a print of butter if the Mississippi valley farmer did not sell them the feed, and this at a detriment to American farm soil."

With the new Congressional appropriation the Department of Agriculture expects to have an up-to-date hothouse for the various forcing and other experiments being carried on. Instead of a great number of heating plants one for each building, there will be a central plant where the supply for each hothouse can be regulated.

Many farmers are drawing against their bank accounts to a greater extent than the amount of their annual deposits. The fertility in their soils is their bank account and they are constantly depleting it. And yet, if they will, they can instead add to their bank account. They can do better cultivation and plow under more legumes and feed their crops on the farm, selling the meat or dairy products rather than the grain, and thus constantly add to their bank account of farm fertility. And this with the use each year of less and less commercial fertilizer.

An instructive feature of the Agricultural Department exhibit at St. Louis will be the growing of various poisonous farm plants. Plots will also be shown showing diseases as affecting various plants, to serve as object lessons.

"Till, Feed, Spray" is the trinity of work recommended by Professor Bailey of Cornell. If the farmer and fruit grower would secure the largest measure of success.

GUY E. MITCHELL.

High-Grade Fertilizers. There are all kinds of fertilizers, as there are all kinds of people, but that's not the question. The question is which brand of

fertilizer seems to give the most value for the least money.

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MASSACHUSETTS PLOUGHMAN



VOL LXII. - NO. 23

BOSTON, MASS., SATURDAY, APRIL 4 1903

WHOLE NO. 3192

MASSACHUSETTS PLOUGHMAN
NEW ENGLAND AGRICULTURE
Official Organ of the N. E. Agricultural Society.

MASSACHUSETTS PLOUGHMAN PUBL. CO.
Publishers and Proprietors.
ISSUED WEEKLY AT
NO. 8 STATE STREET,
Boston, Mass.

TERMS:
\$2.00 per annum, in advance. \$2.50 if not paid in advance. Postage free. Single copies 5 cents.
All persons sending contributions to the PLOUGHMAN, for use in its columns must sign their names, and send them to the publishers, otherwise they will be consigned to the waste-basket. All matter intended for publication should be written on note size paper, with ink, and upon one side.

Correspondence from practical farmers, giving the results of their experience, is solicited. Letters should be signed with the writer's real name, in full, which will be printed or not, as the writer may wish.

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The New Orchard.

The young fruit grower may well do a little hard thinking over the Powell ideas in orchard culture. While none of the points are in themselves strictly new, they come with especial force because they are largely new as applied to orcharding, and because the results have proved to be fully up to expectations.

Perhaps the most striking passage of Professor Powell's address, as reported in these columns, is the reference to the grand work done by clover in holding water and in filling the soil with nitrogen. Every orchardist knows the trouble occasioned by tendency to drought as soon as the soil is fully used up, and he knows it will not do to let the soil dry down again. He knows also that no single element will give as much growth as nitrogen, which, however, comes high in the market forms. But here is a soil kept full of decayed matter to soak up moisture, and also in three years dressed with 1350 pounds of nitrogen, worth ten cents a pound, or \$135. Truly an enormous result for some clover sowed late and plowed early.

Speaking of clover, it should be called to mind that the common red variety will give best results, where the crimson will not live over winter. A Massachusetts orchardist, who has tried red clover in his young orchard, says it can be plowed under with common plow and a horse in early spring and only a very little need be left between the trees. He finds the results so far all that are claimed, but advises that the clover be not allowed to get too rank before plowing, or the mass of sour green matter in the soil may be too great for best results.

A word may be said to young men starting their first orchard this spring. Let him size up the situation first, and plant no more trees than he may be reasonably sure will get good care from start to bearing. A large percent of trees set are soon neglected and amount to nothing. He should choose only a very few varieties and those such that he knows all about them. It pays to buy good trees, and these are not usually the very cheapest. The soil should be well prepared with plenty of plant food from previous crops. Set the trees in straight rows and by a systematic plan. The effect of a good start goes a long way.

More of the Clark Ideas.

The recent articles on the Clark system appear to have raised new interest in the subject. As one farmer observes: "If we can get so much fertility out of the soil by stirring it often, then one problem of farming is solved." To round out the subject more completely Mr. Clark has prepared the following article, which includes the substance of his recent address to farmers at Auburn, Pa., and also answers a number of recent inquiries:

The more we stir the soil the better the crop. Intense cultivation is necessary for large crops of any kind. Hay in this country is annually worth millions more than corn, cotton, wheat, and rye combined. Fifty years ago it was worth \$2,000,000, now it is nearly ten times as much. Science or something must step in to help keep up the supply. I have personally attended more than twenty thousand letters in the last two years concerning grass culture. It requires many years of careful thought to learn facts in any science, especially when contending with the earth and elements. We feel our way along years before we are sure of anything.

With my seventeen years in the harness I now begin to feel sure of some facts. One, we must have intense cultivation to succeed. I move the earth on my fields in two months just before seeding at least fifty times six inches deep, back and forth, up and down, over and under, and at the same time keep the surface true. Why? To cultivate to an even depth. Again, this process reduces soil, or other vegetation, to plant food, sprouts and kills out foul germs and lets in sunshine. This is intense cultivation.

Some say we must have humus. But if we cultivate enough the humus will take care of itself. This method gives the grass the best chance. Intense cultivation, even to the extent I have heretofore explained, is not expensive with up-to-date tools, the work costing less than \$2 per acre per acre. There is much talk about worn lands. If we will work ourselves, and make our horses work, with good tools we will soon work new life into the soil. We should all work and learn to love work. It is not only honorable, but we must work to have life, health and prosperity.

My object in this talk on grass culture is to show you one and all that if we pull together we can make money on the farm. I want to make the young men and women

stay on the farms. It is an honor to be a farmer. All the good Government lands are taken up. There is no better land in the world than right here. The hue and cry has been, go West, but that is past. You would better stay here. Most of the old farms are large enough to divide. You better stay with your friends; you can make money and also remain with them. It is not necessary to have a large amount of land to make large money. Most of us are land poor. There are thousands of money-making farms in this country of less than ten acres. As a rule, the small farms make the most money. Look at the large returns of the truck gardener. Intense cultivation does it.

Redtop and timothy when sown together will produce 1½ tons per acre more hay than when sown by themselves. These grasses work well together and should be reseeded once in five or six years. They should be sown Sept. 1; that is the time they would reseed themselves. All of the seed on a section should be sown and completed the same day. Why? Because the seed must all start together. I sow fourteen quarts of each kind of seed to the acre, between lines 8 feet apart, and a definite amount of seed to each four rods. Half of each kind is sown each way. No other seed should ever be sown with them. It takes ten months from seeding to produce a crop of grass; forty days from the following May first.

With intense cultivation, a drought rarely, if ever, hurts the first crop. The time to cut any kind of grass is when half the heads are in blossom. Two fine days will cure six tons or more of hay to the acre. With bad weather, no one can tell. Use all the yard manures you can get before seeding, but after seeding use nothing but bone, muriate of potash and nitrate of soda, or their equivalent. Thereafter fertilize every crop whether first or second. Bone makes body, potash strength, and soda is the driver.

I always heap my hay when hot, say from 2 to 4 P. M. Hay should be evenly packed in the mows, especially if the mows are large. The second crop should be cut just before frost, and the field kept clean for winter.

Fields well cared for and kept clean will never winter-kill. Grass fields should never be pastured. You can never get as good results by fertilizing old fields. No animals of any kind should ever stand, stamp, drop material, or otherwise do anything to kill out the stand. No part of the grass stand can ever be recovered except by reseeding.

Keep your grass fields in every way as clean as a garden. Eternal vigilance is the price we pay to get the best results in grass culture or any crop. Among my correspondents there are numbers who have adopted my methods of grass culture, and in some cases they have produced larger crops than myself. A great many have reported five and six tons and more first crop of dry hay to the acre; some as high as seven tons, and in one case over eight tons. My first experimental crop on sixteen acres was over sixty-four tons, and for many years the same field in two crops produced over one hundred. On one flat section of seven-eighths of an acre, covered with clay-gravel hard-pan, no vegetation on it, from one seeding, lasting thirteen years, twenty-six crops produced 104½ tons. A section of five-eighths of an acre in two crops this year gave a rate of 21,400 pounds per acre. Not a year in the seventeen but what some one or more acres in my field have produced more than six tons, sometimes over seven tons, but there never has been a year in which the field has not produced more than six tons to the two crops. That is not due to favorable conditions to start with. It is due to better fertilization, intense cultivation and care. The outside cost of hay produced by this method does not exceed \$2 for labor and \$3 for fertilizer; total cost per ton for well-dried hay in the barn, \$5. A word more in relation to intense cultivation.

A five-acre section of 1425 plum trees was grown without any fertilizer whatever. The result was more than sixteen feet actual average growth in four years, or over three hundred feet to each tree this year, with a product of 1500 large baskets of very large plums in the last two years, and without any fertilization. I have used nothing upon this field except the double-action outway harrow six times a month for three months each year. That was the intense cultivation given it which produced the result. A portion of my field remains as it was originally and not a ton of vegetation has annually grown on an acre in fifty years. That was the kind of land to start with. There is no poorer land in the country. I wish you would come and see it. If you do you will agree with me that intense cultivation and care will work wonders.

Mr. Samuel T. Earle of Centerville, Md., writes Feb. 4: "Your system of intense cultivation is working wonders on my land. We held an institute last week. A lecturer from Ohio told us of one hundred acres of wheat he saw last season which, from intense cultivation, gave fifty bushels per acre. The effect on my land is perfectly marvelous. I would like to have you walk over my land with me. I have found that all it needs is proper cultivation." I have hundreds of similar letters. They make me feel better for living in this age and time.

Success Under Difficulties.

Five years ago there came to the city a man who had been a farmer and country merchant in a neighboring State. He brought a few hundred dollars with him and lost it trying to keep a store to a suburb. He got sick and was cared for by some people who knew him, and on recovery had not a dollar nor a relative in the State. He was sixty years old, and one foot was disabled. He had before him visions of the poorhouse, or a walk back to his old home. He thought the matter of his future was a

plain down grade to a poor relation's grave. The story of his subsequent fortune is told in the Journal of Agriculture.

Just at this juncture a man whom he had known in the past invited him to spend a week with him in the country. He went, and the pure air and the rest put hope in his heart, and he proposed to care for the cattle and the fowls on the place for his board, and the offer was accepted. He worked all that winter on these terms. At night the old man, whose name may be called John Jones, plaited some door-mats of shucks for the house and a large one for his own room which had no carpet. He could not read by lamp-light and continued to plait mats of shucks and grass, and found that he could sell them readily in the city. When the spring work began Jones had \$45 in small money saved from his mat sales. He resolved to try for himself again and rented some land near his friend and stocked it with fowls and hogs. He continued to feed his friend's stock for his board, and worked

and his wife, who wanted to cultivate the land, and last year the old, worn-out patch looked like a prosperous farm. The gullies were filled, and potatoes and garden stuff were raised in abundance. The whole place was alive with fowls, and a pretty herd of cows ranged the country near the farm. The year has been a good one, and Mr. Jones has no debt, has some money, a good horse and buggy, and while a little more gray and a little more lame, does not have any fear of the almshouse, for he can easily sell his belongings for \$2000, and it produces for him more money than he needs and every comfort and good health.

Now that is more easily written about than making the living—but it shows that industry and economy will bring their reward.

Garden Seeds Costly.

"Farming will cost something this year," observed a farmer, after noting the quotations for grass seeds. All kinds, nearly, of



BRICKLY COMFREY.

a small crop of his own of vegetables and potatoes. He paid his rent and had \$115 when winter began and felt rich. He bought forty acres of land, twenty acres of it already cleared and worn out, for \$200. There was a fence, but no house, a good well and some peaches and plum trees in healthy condition. He bought the land at \$6.50 cash and the balance in one or two years.

With his own hands Mr. Jones built a chicken house, a stable and pig lot, all of pine poles, during the winter, and worked for his friend as usual. His foot never got well, and he hobbled the mile between the two places back and forth. He made a little money with the fowls and hogs, his door-mats and baskets, plaited of shucks and grass. The baskets were so thick that eggs could be kept in them in the winter without freezing. He bought some lumber and helped a "saw-and-batchet carpenter" to build him a one-room cabin on his land, which cost him \$28. With a little more than \$50 in cash he moved to his new house, using a shelf for a bed, and with \$6 worth of furniture and cooking utensils, he went to work for himself full of hope and energy.

He had no remarkable success, but he had food for the winter and nearly \$200 on the first of October. When his next note for his land fell due, he paid both notes, made his room more comfortable with furniture and utensils, and went to work as usual on his baskets and mats and bought a cow and a horse, both on credit, from neighbors. He killed and sold eleven hogs and got \$32 for them, paid for his cow, worth \$15, and paid \$15 on the debt for the horse, which cost him \$80.

When spring came again Mr. Jones found himself with very little money, but with seed and utensils, fences in perfect condition, and with a calf to sell, butter to sell, fruit looking well, fowls in plenty and twelve hogs and pigs. His horse was his only debt. He could not plow and had to depend on his fruit, berries, fowls, butter and his garden. All did fairly well and the horse was paid for, a comfortable two-room cottage built, two more cows purchased and a pole barn built to hold the potatoes, pumpkins, onions and the hay saved for the horse. There was \$120 on hand in cash. The first cabin was turned over to a man

bulk seeds seem to share in the advance, especially peas, beans and corn, which have gone up two hundred to three hundred per cent. Dealers say that last season was unfavorable for growing and ripening the seed crop. Beans suffered very severely from the wet weather. Seeds which the wholesalers contracted for at \$2.40 are now listed at \$6.50 a bushel, which is nearly \$1.50 more than the highest price that has been paid for thirty or forty years. Horticultural and bush cranberry beans also suffered, but not so badly as the wax beans. These were also contracted for at \$2.40, and they are now listed at \$4.50. Very little sweet corn matured properly for seeds, and the contract price of \$1.75 is now more than \$5 on the price lists. The greatest percentage of increase is on cucumber seeds, which have been bought by the wholesalers for years for 18 cents a pound. They are now paying \$2.50, as there were no seeds grown last year, the only seeds on the market being some that were carried over.

Very Successful Pig Raising.

Questions about the pig business have been asked by J. H. Waterhouse, Harrington, N. H., and Sidney Kenney, Pennsylvania. The first mentioned says he can raise his own corn, mostly, and cultivates about sixty acres of land. He wants to work into pig raising and asks for suggestions, particularly from Forest Henry's experience and wonderful success. Mr. Kenney is in the business, but the failure of his crimson clover last fall, owing to drought, has left him short of early pasture. T. B. Terry has made a study of Forest Henry's method, and replies as follows in the Practical Farmer:

Mr. Henry keeps twenty brood sows and raises one litter of pigs only in a year. These come along from the fifteenth to the thirtieth of April. In 1900 he raised 157 pigs and sold them to a dealer to ship to Chicago for \$23.84. In 1901 he had about the same number of pigs and sold them to a dealer again for over \$2700. The price was a little higher. Each year he bought and fed about \$300 worth of wheat shorts. All other food was raised. Thus he had in 1901 \$2400 net after paying for shorts. Only sixty acres of land were used for pasture and for growing corn, oats, rape and pumpkins for the pigs—all the food they had. Thus, not counting labor, he got \$40 an acre for all land occu-

pled by pigs and crops to feed them. Is not that a wonderful return? One year, some time since, he did ten or fifteen per cent. better than this. During the last fifteen years he has never failed, as he reports, to get at least \$25 an acre, no matter how low the price might be. His last year's pigs are not sold yet. He thinks there is the most profit in selling them when they weigh two hundred to 250, but one of the lots mentioned weighed almost three hundred each on the average. He sells when they are along towards eight months old. They weigh about one and one-fifth pounds for each day they have been kept.

GROWTH AND HEALTH.

This is not a great gain; many have beaten it; but Mr. Henry keeps them growing steadily, largely on cheap pasture, so this moderate gain is made very economically. That is his great point. This also tends to keep the pigs healthy. It is rather a startling fact that while hogs have died of cholera all around him, time and again, he has never lost one single one. He simply uses common sense in the breeding and care of pigs, pays attention to the simple laws of health, and nature rewards him as she will any one else. There is not the slightest need of hogs dying with cholera, or taking it at all if they are properly bred and cared for.

A BUSINESS PIGGERY.

Mr. Henry uses for pasture for pigs three five-acre lots of very rich ground, lying side by side. The middle one is a permanent pasture, particularly for early green feed, of June grass, white clover and other natural grasses. The pigs run in this every day in the year, having a warm sleeping-room, with a cement floor, under a corn crib in one corner, and an outdoor feeding floor with a tight board fence around it to keep wind off. The feeding floor is some little distance from sleeping quarters, so pigs will leave their droppings on way to feeding floor rather than on it. They are fed out of doors on this floor every day. If snow comes it is shoveled off. One object of this is to have floor where sun and rain can purify it. This helps about keeping pigs healthy. Fresh bedding is put in sleeping-room often, so it is always clean and dry. When pigs sleep on wet bedding there is a loss of at least twenty per cent. of the food they eat that goes to make heat and force.

He uses little individual pens for the sows to farrow in. They are built at bottom, the frame being 2x4s and 2x6s. The pens are made of boards six feet long, using a 2x4 at top to nail boards to. Board up back and put a fender pole across inside to protect little pigs; none needed on sides. Board front down from top to within about two feet of ground. They cost less than \$2 each. These are placed on the ground in dry places in permanent pasture. A sow will pick out her pen at farrowing time and stay in, or about it, for some weeks, with her young ones. The little pigs can get out on the ground from the first day and run about. This is the great point (better health) in connection with the very low cost of pens. A little straw is placed in each one. Remember, pigs do not come until mild weather, when they can run out. In case of a bad storm two men can turn pens around back to wind.

His average losses of young pigs with this system are less than one pig to a litter. It is a cleanly, natural system, and still very cheap and little trouble. In due time the sow takes her young ones to the large, light, dry sleeping quarters. This room is so warm in winter that pigs never pile up.

CHOPS FOR A PIG FARM.

On one side of the permanent pasture Mr. Henry has, each year, a red clover pasture, and on the other a corn field, each five acres. Clover seed is sown in the corn at the last working, a full peck. In fifteen years he has never failed of getting a good stand. The corn is removed, but stalks left standing. No pigs are ever allowed on the young clover the first fall. The stalks hold the snow. The very rich soil helps to secure a stand. The land is too rich for small grain, hence this rotation with, and seeding in, corn. An enormous crop of corn is grown on land has become very rich from the droppings of pigs for years. In the spring, early, Mr. Henry sows now about five pounds of Dwarf Essex rape seed per acre, right on this young, new-seeded clover. Frosts and rains cover it. The plants grow up along the corn rows, where clover did not take well, and work in wherever there is a chance among the clover plants. The result is a mass of feed, clover and rape, enough to carry the stock all summer, in connection with the grass pasture and needed grain. When pasture gets ahead of pigs, either the grass or clover, he mows it off so it will start up fresh. Some years mowed was saved for hay, but the clover could not be on account of the rape in it, which would not cure out. Mr. Henry had intended to add another field to his rotation for pasture, and sow rape alone, but this clover and rape together he now thinks better. You understand that a clover and rape field is used one year only for pasture, and then is plowed for corn the next season, and the last year's corn fed becomes the pasture that year.

You notice ten acres are used for pasture each year, then the corn from forty acres is used to feed pigs, and the oats and pumpkins raised on about ten acres more, making sixty acres altogether. Mr. Henry has more land, of course, and rotates clover, small grain and corn, so corn is not grown on same land each year, but the products of sixty acres only go to the pigs. A small field of heavily manured land is put in pumpkins each year, grown alone, not with corn. This helps keep pigs healthy and corrects the effect from corn feeding. They eat a double box load per day. The pigs are fed a growing ration at first, as has lately been described; no corn.

A small dairy is kept to supply skimmed milk for pigs. The cost of this is more than offset by the corn stalks that the pigs do not eat. To furnish the earliest pasture for next spring, in this latitude, where one hasn't clover, Mr. Henry advises sowing a bushel of barley and five pounds of rape seed per acre. Make two sowings, say three or four weeks apart. Turn pigs on rape while it is small, or they won't eat it. Rape makes a good early pasture, but does not last long; soon gets tough. Mr. Henry uses the common red clover. His methods would all work well in New Hampshire. The same crops could be grown, and certainly one should raise but one litter a year. If a sow raises but one litter they can run with her longer, and will be stronger, and need not come early, and danger from cholera is much less. A fall litter in the North must be fed on costly grain and dry feed; no money in it.

Our readers will find above a brief outline of one of the best systems of growing pigs successfully. The two friends named can certainly find answers to their questions in this article. A man with small means can go into pig raising in this way, because the cost of buildings and stock to start with is small. Get some good breed and a pure-bred sire. Keep the sows some five years, or as long as they raise good litters. The same with the male. Breeding from immature stock year after year, and inbreeding, is one cause of lack of vitality that allows cholera to get a foothold. Don't cross breed or be changing around, but stick to the one good breed. Mr. Henry has Poland Chinas. There are other good breeds.

Eggs Lower.

Receipts of eggs have been very heavy at New York and Boston lately, and prices have declined sharply. Dealers seem to think prices are down to stay, and are preparing to buy for storage, April eggs being preferred for that purpose, as being cheap and at the same time most free from effects of frost or heat. It is reported that some purchases will be made the first of the week by Boston dealers who wish to store for their own trade. The grade desired is now selling at 15 to 16 cents. A special grade is packed for storage, the smalls and dirties being taken out.

There are eggs in Boston which sell considerably above the best regular quotation. These come as the product of certain nearby poultry farms, and are large, uniform, clean, and mostly brown in color. Dealers guarantee them, and charge 5 cents more or less above the market.

Hay Trade Steady.

The condition of the leading markets is considered favorable for the time of year. Supply and demand are pretty well balanced and the general level of prices maintained. The season, as a whole, has proved remarkable. At the outset the problem was to dispose of a big crop of more or less inferior hay at satisfactory prices, and so far this has been fully accomplished. The average quality was never poorer, while the average price has been along the top level right through the winter. There is plenty of chance for trouble yet, however, since the quantity of low-grade stock on hand is still very considerable, and too much of it on the market at one time might clog the machinery of demand which hitherto has worked so actively. Concerning the top grades no anxiety need be felt, as their scarcity insures their sale at firm prices whenever offered.

At New York receipts were about 8400, or slightly above last week's record. The market is practically unchanged, with top grades firm and low grades selling slowly. Liberal quantities of cheap hay are being exported. Rye straw is more plenty and lower.

Receipts at Boston have been rather heavy, but mostly No. 2 and poorer. Prices are unchanged. Western and Southern are active, with arrivals ample in most cases. At Montreal the market is quiet, with no surplus.

The following table shows the highest prices as quoted in the Hay Trade Journal for hay in the markets mentioned: Boston \$19.50, New York \$21, Jersey City \$21, Brooklyn \$20, Philadelphia \$19.50, Pittsburg \$18.50, Pittsburgh prairie \$10, Buffalo \$17, Kansas City \$12.50, Kansas City prairie \$9, Duluth \$11.50, Duluth prairie \$11, Minneapolis \$12, Minneapolis prairie \$11.25, Baltimore \$20, Chicago \$14.50, Chicago prairie \$12, Richmond \$20, St. Louis \$15.50, St. Louis prairie \$10.50, Cincinnati \$17.25, Nashville \$19, New Orleans \$20.50, New Orleans prairie \$11, San Francisco wheat hay \$14, Washington \$18.50, Montreal \$9.50.

Wool Active, but Prices Weak.

The shipments of wool from Boston to date from Dec. 31, 1902, as stated by the Boston News Bureau, are 59,585,192 pounds, against 58,621,505 pounds at the same date last year. The receipts to date are 46,927,322 pounds, against 49,686,253 for the same period last year. The market is rather more active. Prices have weakened on medium wools, with freer sales in consequence. Scoured pulled wools, notably B supers at 40 cents for choice, have sold very freely. Missouri one-fourth blood combing has been offered, delivered in Boston, as low as 22 cents this week. Choice Ohio wool of this grade has been sold at 23½ cents. New South American crossbreds are arriving and selling at 27 cents, for one-fourth blood, costing a cent or two less the scoured pound than domestic wool of the same grade. The imports to the United States are not over 12,000 bales, barely a third of last year's imports. The attendance of buyers in Boston this week is the largest in months. New clip Arizona wool has been opened in Boston at 48 cents clean for fine medium.

Dairy Markets Unchanged.

Quotations are practically the same as those reported last week, owing to a continuance of the conditions then noted. The only feature is that the receipts of fresh-made creamery are rather light, but the market is quiet all along that line and the demand is not in excess of the supply. A good many lots are not quite up to the top quality, and the great bulk or sales in Boston are at 26 to 27 cents. Low grades, as heretofore, are plenty and selling with difficulty, although there is a fair amount of export trade. Some nice lots of Northern dairy showing new milk flavor are in demand at 25 cents.

J. R. Ellis & Son: The market for fresh creamery is 27 cents and 21 cents to 33 cents for June storage. Trade being dull, there is plenty of storage butter left, but having 3000 packages, compared with 1200 last year at this time. Rogers & Sullivan: Fresh-made creamery butter quotes 27 cents to 28 cents, the supply being a little short, but trade is light. The supply and quality should both improve soon with advance of the season and increase of new milk. Eggs 14 cents to 15 cents. The supply of eggs has gone down and seems likely to stay down for the present. Receipts in New York are extremely large, 33,000 cases Tuesday. G. A. Cochran: The market presents no special feature, being quiet and prices unchanged. There is better demand for good dairy stock, and if there is no increase in receipts of the best grades, prices may have to be put up again.

Butter receipts at New York Wednesday 788 packages. The call for best grades is active, while receipts are moderate and the market firm. Only very fancy lots bring 29 cents, most of the best lots selling at 29 cents, and others at 27 to 28 cents. Storage butter is not in very brisk demand, as the retailers do not like to carry it in warm weather on account of its inferior keeping qualities. Exporters are finding a fair foreign demand, and are taking some lots of the lower grades at former prices. The quantity of butter exported from the United States during 1902 amounted to only 8,959,316 pounds, against 24,349,565 pounds in 1901 and 13,285,587 pounds in 1900.

The cheese situation is exceedingly firm and holders are very confident, believing the tendency of prices to be up rather than down. Sales are reported of choice lots at a shade higher than quotations. Exporters are using considerable of the lower grades and also some that is first class. Fall-made skin is in good demand at full prices for such grades. Winter-made skins being not very plenty are readily taken care of in the market. Receipts of cheese at New York Wednesday 1473 boxes.

At Boston for the week receipts were 533,719 pounds of butter, 1999 boxes of cheese, 13,067 cases of eggs. Figures for the corresponding week last year 538,454 pounds of butter, 1928 boxes of cheese, 27,804 cases of eggs. Besides the above, there were 1019 boxes of cheese billed for export, compared with 4383 boxes a year ago. At New York receipts for the week were 32,900 packages butter, 10,300 packages cheese and 64,800 cases eggs, against 27,880 packages butter, 16,732 packages cheese and 37,397 cases eggs for the corresponding week of the preceding year.

Provision Trade Moderate.

Hogs and pork provisions have been tending slightly upward, although already relatively high. Quotations at Chicago reached high-water mark the middle of the week. This was caused by very small hog receipts at Western points. The marketing of hogs has been further reduced, partly owing to the unfavorable condition of interior roads. Total Western packing, 315,000, compared with 340,000 the preceding week and 425,000 two weeks ago, according to the Cincinnati Price Current. For corresponding time last year the number was 380,000 and two years ago 380,000. From March 1 the total is about 800,000, against 930,000 a year ago—a decrease of 130,000.

The kill of hogs at Boston was larger than for preceding week. The total for the week was about nineteen thousand, preceding week 18,500, same week a year ago 23,400. For export the demand has been larger, the total value by Boston packers having been about \$190,000; preceding week \$180,000, same week last year \$195,000.

A Chicago expert says: "Predictions are freely made that hogs will reach \$8 in the near future; in fact, dealers in the country are holding them at that figure, which would mean they will have to sell between \$8.25 and \$8.50 on the open market. Such prices seem dangerously high, and there is no question but what packers will fight any further upturn in values. On the other hand, however, hog supplies at points tributary to Eastern markets are giving out, being usual for this time of the year, which means that Eastern packers will have to look to the West for their hogs, all of which will tend to boost prices regardless of what local packers expect of the future."

The demand for hog products is rapidly reducing the stock of meats on hand to a point perhaps never smaller (for this time of the year). The average cost price of hogs at Chicago for the week was \$7.46, the highest in nearly six months, 23 cents higher than the previous week, 67 cents higher than a month ago, 95 cents higher than two months ago, \$1.17 higher than a year ago, \$1.76 higher than two years ago and \$3.66 higher than the corresponding week of 1899, when the average was only \$3.80.

Mutton, lamb and veal are still scarce in leading markets, and lamb shows some advance for best qualities. Veal may be expected to be more plenty soon.

Beef is in full supply in most markets, and selling slowly. Prices are steady with even a small advance in New York and Chicago, but neither beef nor pork can be expected to hold their present level with the price of grain and feed declining. Beef arrivals at Boston for the week are again very large, being 159 cars for Boston and 115 cars for export, a total of 274 cars; preceding week, 143 cars for Boston and 127 cars for export, a total of 270 cars; same week a year ago, 127 cars for Boston and 103 cars for export, a total of 230 cars. There is still a small supply of venison offering from cold storage and selling at high prices. Game is in moderate supply and sells slowly at unchanged prices: Mallard ducks sell at \$1.50 per pair; redhead ducks, \$3 to \$3.50; wildgeon, \$1. Philadelphia squab are firm at \$4 to \$4.50 per dozen, with natives at \$3.50 to \$3.75; quail, \$4.25 to \$4.50 per dozen; plover, \$5 to \$6 per dozen.

Live fowls are in rather short supply and sell easily at quotations. Receipts of dressed poultry are also rather light. Choice chickens are in demand, but few turkeys are wanted, or frozen fowls unless in prime conditions. This is the season when much of the stock from distant points arrive in bad order, not being properly fed. Spring ducks are rather scarce. Capons in moderate supply. Tame squabs are more plenty and tending lower.

A COMMISSION MAN'S VIEW.

Every commission man has considerable trouble with new shippers, who find fault with the net returns made for produce, and in some cases with apparent good reason. Every shipper has had the experience of sending goods, produced and shipped at great expense and trouble, but receiving returns which did not pay for the boxes and shipping charges.

"What is the trouble with shippers?" was asked a Boston commission man recently. "Why is it that even when dealing with commission men of unquestioned business honor and ability, so many shipments are unsatisfactory to the producers?" "Most of such cases," replied the dealer, "are from those who have small lots to sell and who have had little experience in packing and marketing. The small shipper is always at a disadvantage in times of surplus or glut, because the dealer will always give his large regular shippers the preference in selling goods, it being to his interest to sell more and not check their shipments."

But small shippers who send a few bushels of pears, or a half-dozen barrels of apples, or a few pounds of mushrooms, or something of that kind, are of no special value to the commission man then, and in times of a glut their goods will be sold for what they will bring without special effort. The small shipper is usually unskilled in packing and his goods often arrive in poor condition. Only large growers systematically aim to produce the best quality, to grade their produce carefully, put it up attractively and study the market situation before shipping. Some of them find out by telegraph or telephone about the condition of affairs before sending up their produce.

The large growers near Boston have daily dispatches from Boston and New York giving the returns of rates, shipments and quotations prices. Such close relations as these with the commission men give them great advantage.

"On the other hand," it sometimes occurs that the small shipper has an excellent quality of something that is scarce, and in such cases he is often surprised to receive a great deal more than expected. I am very sure that a large majority of the commission men here are honorable business men who would not think of dealing dishonestly with their shippers, but they are human beings, and are likely to take good care of their friends, that is to say, of the older and regular shippers, rather than a new and occasional shipper.

The commission man has troubles of his own. Shipments from the South are especially unsatisfactory because so many of them come in bad condition. Perhaps he has paid a big express or freight bill on a package of vegetables that the producer has failed to ice, and the stuff inside has wilted to a worthless mass of garbage. A crate of berries may be not worth the charges on account of green and dirty fruit. A great many of the shipments from the South are so poor that the only market for them is to let the street peddlars have them for whatever they care to give. There is no other outlet for low-grade goods. They are sold for about the value of the crates and boxes in which they come.

"This year there is less trouble than usual on this account, the demand being good for anything that is really fit to use. There is good, clean competition, however, among the producers. Only the best stock will now bring prices which are satisfactory. There never was a time when good produce would sell better than now, or in larger quantities."

"The new shipper always firmly believes that his goods are strictly first-class and put up in a first-class manner, but as soon as he produces a considerable quantity of anything the market wants, and learns how to put it into attractive shape, he will have no difficulty with his returns from the commission man."

How Crops are Reported.

Uncle Sam's annual crop figuring is a task that makes thousands of his employees work feverishly in order to do an immense job in a short time. Of course, he cannot send out men to count the crops on each farm in the country. That would require armies of men and even then the figures would not be ready in time.

Uncle Sam has a different system. He has on his list more than 250,000 persons throughout the United States who are in a position to know what the crops are going to be in their various districts. They are farmers, who know because it is their business; bankers, who know because they often lend money on standing crops; merchants who deal directly in some way with crops; and cotton ginners, millers, grain elevator owners and railroad men.

These persons all report to Washington, each one telling what he knows about the crop that year and what he thinks it will be like in his section. But Uncle Sam does not depend on these alone. Some of them might make mistakes, others might not be willing to tell everything they knew. So Uncle Sam has thirty-eight men stationed in the most important agricultural States of the Union. Each of these men studies the crops of his own State and has on his list another set of correspondents, entirely different from those who report to Uncle Sam. There are about ten thousand of these special correspondents, and every one of them sends in his own independent figures.

Then in each agricultural county, the Government has still another crop correspondent, and he in turn has three or four correspondents in that particular county. These people report everything they know about their special counties. There are ten thousand of these, too.

Not content with this, the Government has still another staff of correspondents in each township and voting precinct in the United States where there is any farming. There are thirty thousand of these men, and each tells only about his particular township.

Each one of this immense army reports eleven times a year. Still this is not all. For instance, to find out about the cotton crop, the figures sent in by the correspondents mentioned are revised and compared with the figures sent in separately by sixty thousand cotton-gin owners and fifteen thousand bankers and other business men.

To compare the figures for the production of grains and cereals, Uncle Sam gets separate reports from eighty-five thousand farmers, each of whom tells about his own crop only, and from twenty-two thousand railroad men who tell of the stocks of cotton that they are preparing to ship.

Almost all of this work is done for the Government without pay. The correspondents know how valuable it is for them all, so they pitch in and help freely. The number of reports that has been handled in Washington in one year has been as high as 2,500,000.

The Government reports now cover the acreage, production and farm value of corn,

wheat, oats, barley, rye, buckwheat, cotton, potatoes, tobacco, flax and hay, and the number and value of farm animals.

Cotton is reported on seven times each year, wheat eight times, corn and oats each six times and other products from two to eight times each.

After all these figures are in the hands of the Government, the most important work remains to be done. It is to figure out the true meaning of the mass of statistics. Crops may be wonderfully good in one State and miserably poor in another. How will this affect the crop of the whole country? And this must not only be done accurately, but it must be done promptly. And since the reports are so important, it is equally necessary that they be kept secret till the day on which everybody may know them. It would never do to let any one person or combination of persons know of them in advance.

Therefore elaborate means are taken to preserve absolute secrecy. Only one man is intrusted with the particular reports that furnish the key to an understanding of the whole. The special agents in the various States mail their reports direct to the chief of the Bureau of Statistics, and he locks them up with their seals unbroken until the day on which the report is to be issued.

Other State agents telegraph their reports in cipher. When all is ready for the final working out of the announcement, the chief calls a staff of clerks into his room and sets them to work on the tables.

Then the chief takes their calculations and works out the final tables himself. He does not begin to do this until two or three hours before the time for publication. While he is doing it, all the doors are locked and no one is permitted either to leave or to enter the room.—N. Y. Sun.

Literature.

A story of a clever woman forms the plot of "The Hon." Mrs. Walter R. D. Forbes' novel, "Unofficial," in the Appleton Town and Country Library. A young girl by her dying father's advice gives herself in marriage to an unscrupulous French gambler to whom she is indebted for financial assistance. Guarded as a prisoner she is made to serve as a drawing-card in order that moneyed men might visit on those father-son days and remain to lose their money to her husband. Complications arise because an Englishman has the temerity to attract the Madame's attention and finally win her love.

A jealous, vindictive Frenchman also becomes a suppliant for Madame's smiles. Driven to desperate measures, the woman undertakes to convey a written message to her English lover. The message is on a playing-card, and the French lover sees the back side of the playing-card hidden and accuses the Englishman of cheating at the game; in other words, of having a card up his sleeve. A quarrel follows, a duel is all but arranged for, and the Englishman is apparently doomed, both in regard to his life and his honor. But a clever woman arrives. She is related to Madame, and she knows an ugly secret about official matters concerning the French lover, on whose father one of the old nobles, to whom honor is everything. She, however, possesses no papers to prove her charge, although she once read them and burned them at request. Being clever and diplomatic she invites the Frenchman to call, asserts that she possesses proof of his treachery, and offers to exchange the proofs for two letters of apology over the card episode. At last, convinced by her accurate and full knowledge of the contents of the papers, he sits at the table and writes. In an adjoining room a gentleman has waited with a long, bulky envelope, and at the agreed signal he enters and gives monsieur the supposed papers. He has heard the Frenchman inculminate himself, but he does not know that he is giving blank paper until afterwards. Thus, by the brains of a clever woman, another woman's honor and a man's life as well as honor are preserved. All ends happily. The author has conceived an ingenious plot, but she falters in narration. The people are puppets and the story lacks finish. But the conversations are well done, and the story will make good light reading. [New York: D. Appleton & Co. Price, 50 cents.]

Miss M. Carta Sturge has bravely met and answered the religion called Christian Science, founded by Mrs. Eddy. The Rev. H. S. Holland, M. A., has furnished an able introduction to the treatise which the author calls "The Truth and Error of Christian Science." The Rev. Mr. Holland writes that he is glad to leave to Miss Sturge the task of handling the unfortunate metaphysics to which Christian Science has attached itself. He says "the relation of mind and matter was not likely to be resolved at a stroke by one who is so ignorant as Mrs. Eddy seems to be of all intellectual efforts which for two thousand years philosophy has spent upon this particular problem." Miss Sturge, according to Mr. Holland, has shown with a keenly sympathetic appreciation how deadly is the practical bias of a perverted idea, and Mr. Holland also points out the position of Christianity as it looks out on the entire sum of facts, of all the reality which they enter into our experience. The spirit and the flesh express different existences, and cannot meet on the same platform, but although antithetical, yet does not life find expression in both? The relation of body and mind and its connection with God has been clearly set forth by Rev. Mr. Holland, and that is the reader prepared to enter into the argument by Miss Sturge, which follows:

The Christian Science belief is briefly sketched and then the fundamental principles are stated, one by one, and fully discussed. "The Unity," or assertion of "Oneness," comes first, and this is the underlying principle of "Science and Health." Everything is argued back to God, and His spirit, therefore, we can come to one deduction—that God, being all, matter is nothing. To quote: "Matter has no sensation, for it does not exist." Those who have read Mrs. Eddy's books will recall the constant illogical deductions and contradictions. In following Miss Sturge's arraignment and discussion of the principles of Christian Science, the false assumptions made by Mrs. Eddy are legion. There is no "matter," yet we have a "mortal mind," which has a scientific definition, and thus we are in the midst of contradictions. After having carefully considered all the principles set forth by Christian Science belief, the author arrives at the conclusion that it is impossible to say, with any certainty, what Mrs. Eddy's teaching about Christ is. She doubtless accepts Him as the great exemplar, and her system of ethics is founded on His teachings. She contradicts constantly. For those who reject its "metaphysics," however much they may believe in mental-healing Christianity, remains untouched, while for those who accept the bundle of contradictions called "metaphysics," it would be useless to distinguish the doctrines of Christianity. Miss Sturge has treated her subject fairly and squarely, and she has allowed no personalities to creep into her treatise. It is written in a spirit of respect for those who differ with her views and conclusions. She reminds us that many ignore the fact that many of the doctrines of Christianity are found in Christian Science. That the Bible can do much to heal an ill body we all know, but that we are so far advanced in the God-knowledge and spirit as was Christ and are able to control life and death, is what we cannot admit. Miss Sturge's arguments are to be commended to those interested in the subject pro or con. [New York: E. P. Dutton & Co.]

Popular Science.

Curious figures are obtained by Dr. W. J. Russell when magnesium dust or other fine powder is sprinkled over a plate of glass, copper, ebonite, cardboard or other material, the plate being about 12° C. warmer than the air. The best results are obtained when the dust gently settles over the plate during cooling. The figures vary with the shape of the plate, usually showing radiations from the angles, and they are affected also by any neighboring object, such as an upright pin at the edge of the plate, or a piece of glass over it. After a week or a fortnight the dust figures become so adherent that they can be brushed gently without injury.

Non-acetate white light, first made known by a French photographer some years ago, is produced by filtering sunlight through a colorless solution of three parts of nickel chloride and one part of cobalt chloride, ultra-violet rays being absorbed by coating the containing vessel with ebonite mixed with sulphate of quinine slightly acidulated with sulphuric acid. Sensitive paper has been exposed to this filtered white light for a week without change.

The electric radiator of E. G. Rivers has a layer of finely powdered retort carbon held between enameled iron plates, and kept in position by asbestos cardboard. A copper strip led in at the centre, with another at each end, and a continuous current is passed from the centre strip to the outer two. A current of eight amperes at two hundred volts keeps a heating surface of twenty-five square feet at an average temperature of 190° F.

The Parolan idea of introducing electricity into billiards is ingenious at least. In the centre of the table is placed a plate of some easily electrified substance and the balls are of compressed pitch, the cue being tipped with chemically prepared cork. The balls being influenced by the electrified plate, caroms are difficult. The player finds exercise for greater skill than ever. It is claimed, and the new difficulties add zest to the game.



CAMPBELL'S EARLY GRAPE.
See descriptive article.

Curious Facts.

—On the West Indian island of Nevis there is a population of over thirteen thousand, with only one doctor to administer to the ailments of the people.

—As a rule gray horses attain a greater age than those of any other color.

—A full set of the "Almanach de Gotha," from 1784 to 1900, was recently sold in Paris for \$1500. Of course, its value is largely that of a literary rarity, but the old volumes are extremely useful to special students.

—It is said that the profitable hen eats sixteen times her weight in a year. Her eggs are six times her own weight, and worth six times the cost of her food.

From history we learn that the boys in the time of George III. coasted on sleds made of a small board, with beef bones as runners, but these dropped out of sight when an inventive genius built one out of a barrel stave, for his invention was extensively copied. The barrel staves were called "jumpers" and "skippers," and were made of a single barrel stave of moderate width, to which was nailed a twelve-inch seat-post about amidships.

Spiders are met with in the forests of Java whose webs are so strong that it requires a knife to cut through them, we are told. A spider weighing four pounds, which has taken up her residence in a cathedral at Munich, regales herself with a large supply of lamp oil. A Texas spider weaves a balloon four feet long and two feet wide, which she fastens to a tree by a single thread, then marches on board with her half-dozen little ones, cuts the thread, and away goes the airship to some distant point on the prairie.

Signor Zanardelli, the prime minister of Italy, says that at present foreign tourists annually spend in Italy \$60,000,000. Rome almost entirely lives on her foreign and provincial visitors.

—The success of the English herring fishing continues to have a remarkable effect on the matrimonial market. On a recent Sunday the banns of no fewer than twenty-three fisher couples were published in Buckle parish church, Banffshire. On the previous Sunday the number was sixteen. At other fishing hamlets along the northeast coast of Scotland the success of the fishing continues to result in a large number of weddings.

—Investigations of the Weather Bureau indicate that the warm westerly chinook winds, blowing over the eastern flanks of the Rocky Mountains, have a beneficial effect in the prevention of disastrous food-producing thaws. It is true that the chinook suddenly melts the snow on the higher parts of the mountains, but the warm wind fails to reach the bottom of the gulches, and so the snow water is frozen again during its descent, and becomes caked in ice deep down the ravines, the ice remaining until the approach of spring gradually removes it. In illustration of the curious temperature differences that occur when a chinook is "blowing," it is said that the thermometer at Helena, Mont., has stood at 20 below zero, when it was above zero at Unionville, only six miles away, but a few hundred feet higher, at the head of the gulch.

Gems of Thought.

....This is the beginning of all Gospels, where the kingdom of heaven is at hand just—that we are. It is just as near us as our work is, for the gate of heaven for each soul lies in the endeavor to do that work perfectly.—William C. Gannett.

....Sobriety and with clear eyes believe in your own time and place. There is not, there never has been, a better time or a better place to live in. Only with this belief can you believe in hope.—Phillips Brooks.

....Aim high to do your best;

Then though the mark be hid, the generous deed

Shall ever live, itself the noblest prize.

—John C. Hoedley.

....It is vain to think that we can love the Master more than He has been loved in olden time; but that love can become more intelligent with the progress of our race, and it can be kindled in an ever-widening circle of pure and gentle souls. To fulfill this possibility should be the aim of the Christian Church, as it is our best hope of the spiritual welfare of mankind.—Howard N. Brown.

....Let the current of your being set toward God, then your life will be filled and calmed by one master passion which unites and stills the soul.—MacLaren.

....Not in husbanding our strength, but in yielding it in service; not in burying our talents, but in administering them; not in hoarding our seed in the barn, but in scattering it; not in following an earthly human policy, but in surrendering ourselves to the will of God, do we find the safe and blessed path.—F. B. Meyer.

....Over-eating is not called a vice, a sin, or a crime. And yet we think it possible that it may take life more certainly and more often than any other practice or disease.—Christian Register.

....Every day is a fresh beginning;

Every morn is the world made new;

A wife's a teacher, and a child a foe;

At honest man's the noblest work of God.

....The man who differs from you and me may not be a knave, but we regretfully admit that there must be something wrong with his mind.—Albert J. Waterhouse.

....To thine own self be true,

And it shall follow as the night the day.

Thou canst not then be false to any man.

—Shakspeare.

Notes and Queries.

TRANSPORTATION OF FISH EGGS.—D. L. R.

Transportation of fish eggs, in the shallow, shallow-slatted trays, designed for the purpose. Over the bottom of the tray is placed one thickness of cotton flannel with the heavy side up, upon which is a single layer of eggs. Upon this layer of eggs is placed a layer of cheese-cloth, and upon that, another thickness of cotton flannel, and then stacked up, one above another, taking what is called a nest of trays. To the straight sides of a nest of trays thus formed, slats are lightly nailed to keep the trays together. The nest of trays is then placed in a box that is big enough to leave under the nest and all around it a space of three or four inches. This space is packed with moss or some other material which cushions the nest of trays against jarring or disturbance. The primary purpose is to make around the eggs a well that will help to keep them at a uniform temperature. In the top of the package thus built up there is placed a wooden hopper, in which ice is put, the cool water produced by its melting percolating downward through the layers of trays, moss and eggs and keeping the eggs moist and cool. The box in which the nest of trays is thus packed has rope handles on the outside near the top, by which it can be conveniently lifted. Fish eggs thus packed can be shipped any distance with entire safety, requiring only that the ice in the hopper shall be renewed on occasion.

THE USES OF VOLCANOES.—"Stephen": Terrific as are the forces of volcanic action, they have in the past, and do, serve their ordained purpose in the magnificent scheme of cosmic development. Volcanoes form a natural vent for the pent up internal forces resulting from the slow cooling and consolidation of the earth's mass. They act as the safety valves of the world, without which the crust of the earth would in all probability burst with explosive force, and with a resultant cataclysm appalling to contemplate. Volcanoes tend, in fact, to maintain the normal static equilibrium between the interior and the outer surface of the world.

RECENT COMETS.—"M. P.": During the year 1902 several periodic comets returned to the neighborhood of the sun, but only one of them escaped detection, though they were carefully searched for, both visually and photographically. Four unexpected comets were discovered. Comet e was discovered by Dr. Brooks at Geneva, N. Y., on April 14, and was observed until April 19, but has not been seen since. Comet f—one of the brightest of recent years—was discovered by Mr. Perrine at the Lick Observatory on Sept. 1, and was observed until Nov. 17, when it passed near the sun. It will be an easy object after its perihelion passage for several months of 1903. Comet g was discovered by Mr. Griggs in New Zealand on July 22, and was observed by him to Aug. 3, since when it has not been seen. On Dec. 2, M. (Giacobini), at Nice, France, discovered a faint comet, which is still under observation. The year has not been very fruitful of discoveries, it will be seen; but the photographs of comet f have been very valuable.

THE SOFT SHELL CLAM.—"Excursionist": As every one knows, the clam, when in its native haunts, is to be found several inches below the surface in the sand. He has to be dug up, when discovered by the little spade, but one of the clams beneath throw up when disturbed and suddenly contracting the telescope "necks."

This "neck," which may be three times as long as the shell when fully extended, connects the clam with his food supply in the water above. In it are parallel tubes. Through one tube the clam sucks in a quantity of water. From the water he absorbs whatever nourishment it may contain, and then he expels the water through the other tube. One may wonder how the clam gets down into the sand or mud. At the end opposite the "neck" may be seen an appendage resembling a turtle's tail in shape, called a foot. It is with this foot that he digs his way downward.

THE BRONCHIC PLAQUE.—"Student": The plaque finds its best home among people living on marshy, alluvial soil, in a warm atmosphere, in badly ventilated houses, among accumulations of decaying animal and vegetable matters, insufficiently fed and generally neglectful of the laws of health. It attacks a victim in the shape of weakness, followed quickly by aches in the limbs and loins; then fever comes, and from the second to the fourth day the buboes or swellings appear in the groins, the armpits, or beneath the angles of the jaw. The fever is very acute, but if the patient lives, suppuration sets in about the seventh day, and he may recover. Death appears to be due to exhaustion, due to the pain of the buboes.

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Poultry

Details of Poultry Farming.

Poultry plants with several thousand hens are now quite numerous, but are still of sufficient novelty to possess special interest. One of the largest in New York State is that of Henry Van Dresser, who has fully described his methods on several occasions the past season.

Accurate accounts are kept of all expense of feeding and care, as well as the income from the plants. Eggs are sold to large dealers in New York city under yearly contracts, the price received being fifty per cent. above the highest market quotations at the time of shipment. One pen of nine hundred hens that are used for breeding purposes yielded an average number of 201 eggs during the last year. The chickens are hatched in incubators, the capacity of which is 250 eggs in one batch. The young chickens are separated as soon as sex can be distinguished, and the cockerels are fed in a way that grows them as rapidly as possible, until they weigh one to one and a half pounds each, at which time they are shipped alive to the markets of New York city and Saratoga, where they sell at prices ranging from thirty to fifty cents each alive.

The young pullets are allowed full range of a fourteen-acre orchard and are fed stale bread moistened with skim milk. Later they are fed with millet and Johnny cake, made of two parts corn meal, one part peas and oats, ground together with twenty-five pounds of meat scraps to each one hundred pounds of meal. This Johnny cake is steamed and fed at noon of each day. When the pullets are older they are fed a mixture of cracked corn and whole wheat in large quantities as they will eat up clean.

The laying hens are fed in the morning with peas and oats, scattered in the straw litter of the poultry house. At noon a warm mash is provided for the hens, which is made of a mixture of one hundred pounds wheat bran, one hundred pounds wheat middlings, fifty pounds corn meal, fifty pounds gluten meal, twenty-five pounds meat scraps and alfalfa hay cut fine. The ingredients are mixed together and steamed. They are fed as much of this ration as they will eat up clean.

The night feed is composed of clear wheat one evening, corn next. The temperature of the henhouse most desirable is 65°. Purchasers insist on only the best quality of grain being fed to the laying hens, and the succulent food is confined to broods, which are grown in large quantities for the poultry. The grain feed is of the best quality, all imperfect or damaged grain being refused. Mr. Van Dresser's hens are pure-bred White Leghorns.

Selection and Care of Stock Turkeys. The high price paid for turkeys this season has induced a number of beginners to enter the lists. To such as have had little experience in raising turkeys I should like to offer a few suggestions.

First, and most important of all, do not attempt to raise turkeys unless you can get good stock to begin with. Pure-bred stock is not necessary for market purposes; any strong, vigorous birds of fair size will do that are not inbred or immature.

Hens two years old are preferable; their eggs are larger, more perfect in shape, and a larger per cent. of them will prove fertile. But if old hens are not obtainable, and young hens are to be purchased, be sure that they are from broods of early hatched poult. Better not go into the business at all than start out with little late slips of things as do so many novices.

Poult from immature stock are smaller and more delicate, much more difficult to rear, though when once you do get them well started they may with proper care make fine large birds. It is said that young hens lay earlier in the season than do older ones, but that is not always an advantage, as the first eggs are liable to get chilled in

the nest. As brooders, however, young hens are preferable; for being lighter in weight and more active, they are not nearly so likely to break their eggs in the nest, or to crush the young poult when hatching.

A gobber of the first year is preferred, but be sure that he is a big, strong bird of an early hatch of the season before, that will tip the scales at twenty-five pounds at least, at nine or ten months of age.

Get your stock on the premises as early in the season as possible, and begin feeding them for eggs, not fat. One meal a day they should have of whole wheat, and on cold mornings they will relish a warm breakfast composed of a mixture of two parts, by weight, of wheat bran, one part shorts or middlings, and one part corn meal. Season with salt to the taste, and give them all they will eat up clean in five minutes.

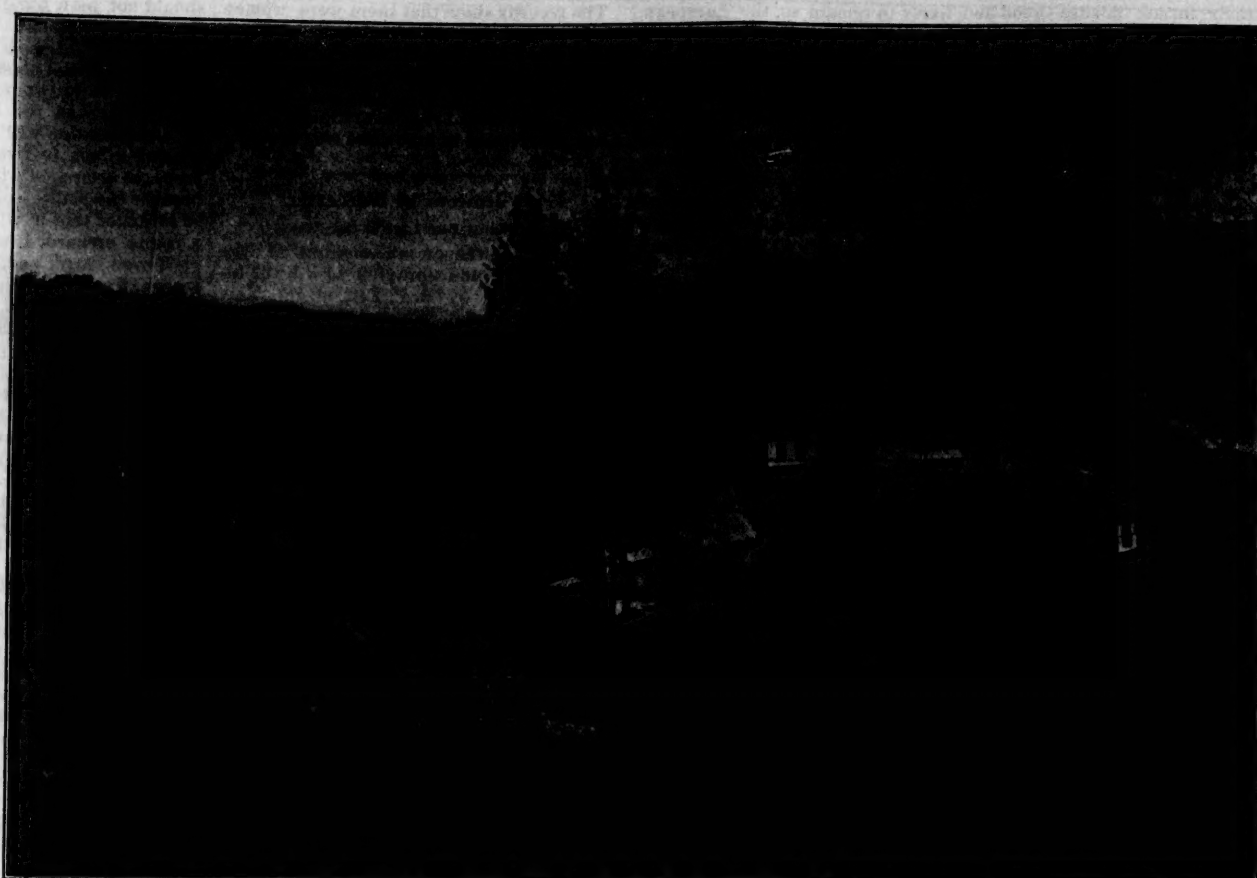
Let their last feed at evening be of Indian corn; corn keeps them warm at night. Unlike chickens, turkeys are healthier when not all allowed meat or rich messes of any kind. Dry grain of good quality suits them better, and as the appetite of the hens is very fastidious at laying time, all the varieties of grain food and fresh green food procurable should be offered them.

Good, sound oats, sorghum seed and clover and grass seed from the flower of the hay-loft form an acceptable variety. Milk, either sweet or sour, buttermilk or clabber is highly appreciated, and as milk is said to be an excellent egg food, the hens should have all they will drink at this time, care being taken that none should remain over night in the trough and become rancid and unwholesome.

Turkeys should be fed in a yard to themselves, and everything about them kept clean and neat. Their well-being demands a clean, dry run, well drained and sunny, an extensive range during the day, where they can gather for themselves the food their wild nature suggests.

Let one person have the exclusive care of them, treating them with uniform kindness and gentleness, remembering that the skin of a turkey is very thin and the flesh tender and easily bruised. Keeping the hens so gentle that they are not afraid of you will be of great advantage in caring for the hens while setting and in helping them rear the young brood.

A FARMER'S DAUGHTER.
Cheap and Bulky Food.
During the early spring months, mangewortzels, if properly kept, may be fed to good advantage. The fowls relish them and they are easily prepared. As it is not difficult to grow ten or twenty tons of these



A. A. HALLADAY'S BEAUTIFUL "MAPLEDELL FARM."

See descriptive article.

roots per acre, their cost is not excessive. In feeding these beets to flocks of hens a very good practice is to split the root lengthwise with a large knife. The fowls will then pick out all the crisp, fresh food from the exposed surface.

Horticultural.

A Model Fruit Farm.

One of the best-known farms in southern Vermont is the one owned by A. A. Halladay, located in a beautiful agricultural section, along the Connecticut river, near Mt. Killbuck in southern Vermont, not far from Bellows Falls.

The farm called "Maplede" was bought about ten years ago, and the present buildings have been erected since that time.

Most of the land was covered with forests at the time of the purchase, requiring endless labor and a good deal of expense to bring it to its present very productive condition. Stumps have been pulled out, brush and large trees removed, fences rebuilt and many other items of this kind well known to those who have attempted to restore a run-down farm.

The former owners would today hardly recognize the farm covered with fruit trees, garden crops and chickens. Mr. Halladay's

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plum and cherry orchards are the largest in the State, and there are a great number of pear, apple and peach trees, strawberries, raspberries, blackberries and currants. The cherry orchard contains about two hundred trees, Early Richmond, Montmorency and English Morello, of bearing age, a beautiful sight when in full bloom in the spring. Plums are a leading feature. The plum orchard includes five hundred trees of nearly fifty different varieties. There are all the leading Japanese kinds and many of the best European varieties, also several of the new Burbank seedlings. The plum season lasts from July to October, and very seldom are the crops a failure on this farm. Black knot has given no special trouble, as these trees are apparently of too thrifty growth and good general condition. So much fruit sets that many bushels are picked off when the plums are about half grown in order to increase the size of the others and prevent injury to the trees. The trees are cut back each season, thus insuring a vigorous growth of new wood and heavy crops of the choicest fruit annually.

Among the small fruits, strawberries are a specialty. They are marketed in new clean baskets, holding a full quart, and are considered the finest appearing berries in the nearby markets. Great care is taken in sorting and packing; only No. 1 is being allowed to go into baskets; No. 2s being sold separately in bulk for canning.

The chicken department is of considerable importance, some four hundred or five hundred being hatched annually in incubators and being raised in brooders. The young stock has the run of the orchards and do good service getting rid of insects, etc. The eggs are put up in packages of one dozen each, stamped with the name of the farm and are sold to a choice class of trade.

Maplede Farm is situated in the Connecticut river valley, within one mile of the village of Bellows Falls, which is noted for its immense paper mills and beautiful scenery. Here also is located the extensive works of the Vermont Farm Machine Company, manufacturers of all kinds of dairy and sugar-making implements, employing hundreds of skilled mechanics. Perhaps no other village in New England is increasing in population and wealth faster than Bellows Falls, thus making a good market for all products of the surrounding farms.

A bill passed by the Massachusetts House of Representatives would permit street railways to carry baggage at a freight, if the consent is obtained of the town authorities and of the railway commissioners.

Exports of frozen beef from Argentina have increased from 8079 tons in 1900 to 70,000 tons in 1902. Exports of live cattle declined during the same period from 315,150 head in 1900 to 118,303 head in 1902.

Prof. L. H. Bailey has been appointed director of the college of agriculture at Cornell, to succeed Prof. I. P. Roberts, retired.

So little wool remains at Boston under the ban of the recent embargo that the business is normal again. Wool is moving as usual, except that a permit from the United States inspector in charge of the local office of the Bureau of Animal Industry is required for each shipment.

Such permits are secured without delay. The latest wool to be released was the Vermont clip. The removal last week of the embargo on that placed about 400,000 pounds on the market. All that remains quarantined in Boston now is the Massachusetts wool, which amounts to only about 10,000 pounds, and that has been transferred to isolated corners in the warehouses.

R. C. Gregory of Unadilla, N. Y., who represents New York interests, has made a big butter contract. It calls for the combined products of hundreds of creameries in the States of New York and Vermont, and in the flush of the season fifty thousand pounds of butter will be delivered daily under the terms of the contract.

Careful investigations show that the winter wheat acreage in the Northwest will not exceed half the normal extent.

The superintendent of the national park has declared that even President Roosevelt may not hunt in the Government preserves on his Western trip. The President's gun will be sealed like any other when he enters the grounds.

Exports of fresh beef from the United States for the eight months ended Feb. 28, 1903, show a decline of upwards of 3,000,000 pounds, as compared with the corresponding period of the year previous. The exports for the eight months ended Feb. 28, 1903, were 155,370,888 pounds, and for the corresponding period in the previous fiscal year 268,702,244 pounds. It is supposed that the comparatively high prices have lessened the demand among foreign consumers.

Africa seems likely to prove, in the near future, a better field than South America for the exporters of the United States. To South America our exports grew from \$38,000,000 in 1902 to \$38,000,000 in 1902, an increase of \$5,000,000, while to Africa, as already indicated, our exports grew from \$5,000,000 in 1892 to \$33,000,000 in 1902, an increase of \$28,000,000. The leading items are farm products, including horses, mules, grain and provisions.

Tree Warden Upton of Newburyport, Mass., has waged an incessant warfare against the brown tail moth, and he has succeeded in clearing the trees in the streets, parks and cemeteries of

"GOOD SPORT IN THE FISHING LINE."

"An Early Season Promising Big Catches."

A week ago the welcome news arrived that the Penobscot River in Maine was free from ice. The significance of this brief message is properly interpreted only by the person who is anticipating with impatience and fervor the time when he can cast a fly into the depths of a Maine lake or rivulet.

It is true that the ice this year has left the rivers of Maine at an unusually early date. In fact, not since 1871 have the rivers and ponds been so clear and free as at the present time. This means an early fishing season, and an early season means a longer one.

Schoho has devotedly looked after her visiting sportsmen in the past in a truly commendable manner, but from the looks of the preparations which the camp owners and hotel proprietors are already making, it is plainly evident that she aspires this year to outdo herself and her glories of the past.

The lakes and ponds throughout the State have been wisely stocked from year to year, so that all danger of a dearth, no matter how large the invading army, is eliminated.

Schoho, the handiest of Maine's lakes, within a few miles of Portland, is a favorite resort for the early corner, and the size of the catches in this lake are, as a rule, above the ordinary. The Rangelys are also famous for their size and variety, and as an early resort, they partake of the same popularity as Schoho. Trout, bass and salmon are quite plentiful here, and the advantages in the shape of natural scenery and health-giving atmosphere are superb. In fact, Maine contains so many choice fishing resorts, numerous trout brooks, lakes and rivers that it would be well-nigh impossible in a brief account to describe or even attempt to give a worthy account of the maize of lakes and ponds, which dot the surface of this famous State.

By simply mentioning a few of the larger lakes and ponds of entry to the different sections, the sportsman who is about to make his first invasion, will get an idea of the variety of places to choose from in the greatest fishing and gaming State in the Union.

The "Dead River Region," famous the country over for its great hunting advantages, also claims distinction by reason of the number of fishing resorts within its borders. Eustis, the center of this region, reached by stage from Bigelow, a route which appeals to every lover of natural grandeur, skirting by the borders of the towering Mt. Bigelow, through a delightful valley where no noise save the creaking of the buckboard and the singing of the birds mars the solitude, is the departing point for journeys in all directions. Here one can secure a guide who will initiate him into the mysteries of the woods, and accompany him to crystal sheets of water where trout and salmon frisk and play.

It is almost impossible to travel in this territory without a guide, for the woods are very thick and the lumber roads are so confusing. Some of the principal bodies of water in this section are "Flagstaff Pond," "King and Bartlett Lakes," "Spencer Lake," "Long Pond" and "Parker Pond."

Another famous and equally celebrated fishing territory is the famous "Moosehead Region." Like the "Dead River Region," during the fall season hundreds of pilgrims wend their way towards the shores of Moosehead for a crack at the deer and moose which are quite plentiful. The fishing consists of pickerel, perch, trout and salmon, and this lake always takes the lead in the supply of salmon and trout during the open season.

The section of Maine known as the "Aroostook Region" is one of the portions of the State where as yet primitive nature holds sway. Beautiful beyond description, wild and rugged forests where the moose have learned to wander in their retreat from man, this territory is reached by means of the Bangor & Aroostook Railroad, Bangor, Houlton, Fort Fairfield and Caribou are some of the gateways, and the lakes include Pemadumcook, Machias, Millinocket, Mattawamkeag and a score of others, while there are any number of rivers and streams. Still another portion of Maine, where the angler can find recreation and sport, is in "Washington County," situated on the line of the Washington County Railroad. It is the latest annex to Maine's fishing and gaming territory, and is even more primitive than the Bangor & Aroostook region.

Newly opened, there are some places in this territory which have never yet been visited by civilized beings, and the forest lands have never yet been devastated by the woodsman's axe. Columbia Falls, East Machias, Brookton and Calais are a few of the points where guides may be secured and camps are located.

Thus the person desiring to spend a few weeks in the pursuit of that sport which "Izaak Walton" characterized as a "Fine Art," will find no scarcity of places and all sorts of fish in the lakes and rivers of Maine.

Nevertheless there are some choice fishing grounds in New Hampshire and Vermont. In New Hampshire Winnepesaukee contains all the choice varieties of fish, from the famous square tailed down to the lesser varieties. Newfound Lake is noted as a famous fishing resort, and Lake Sunapee is a desirable spot for either a vacation or a fishing trip.

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the city from the caterpillar tents. Mr. Upton has had two expert men and three climbers on the work. All householders have been notified to care for their own trees, and in most instances an interest has been taken in endeavoring to get rid of the pest. Upton estimates that he has killed over 3,000,000 caterpillars in about seven bushels of nests. The city improvement society has supplemented the work of the city authorities by offering 10 cents per hundred nests.

—Announcement has been made of the incorporation of the National Packing Company, capitalized at \$10,000,000, and including several of the smaller plants in Chicago, Omaha and elsewhere. The incorporation papers were taken out in New Jersey, and it is announced that the following are the "companies purchased": Omaha Packing Company, Hammond Packing Company, the G. H. Hammond Company, Hutchinson Packing Company, Anglo-American Provision Company, United Dressed Beef Company and Fowler Packing Company. The purchase, it is stated, is made for investment, with the idea of doing a business of about \$10,000,000 a year. The directors are all interested in the big packing companies of Chicago.

—The shipments of grain from Boston port the past week aggregated 336,000 bushels, of which 297,425 bushels were corn and 43,580 bushels wheat. The sailings, with their allotments, were as follows: Steamers Sylva, for Liverpool, 65,712 bushels of corn; Columbian, London, 43,580 bushels of wheat and 26,714 bushels of corn; Turcoman, Liverpool, 65,000 bushels of corn; Sagamore, Liverpool, 51,428 bushels of corn; Bostonian, Manchester, 54,571 bushels of corn.

—The principal articles for which Porto Rico finds a market in the United States are sugar, tobacco, coffee, fruits, manufactures of straw, hides and skins, and distilled spirits. The principal articles for which the United States finds a market in Porto Rico are rice, cotton cloths, manufactures of iron and steel, provisions, breadstuffs, manufactures of wood, boots and shoes, spirits, tobacco, refined sugar, cars and carriages, paper, chemicals and coal, the articles named in each case being in the order of their relative value in the commerce passing in each direction, respectively. The shipments of nearly all these articles increased largely during 1902.

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A detailed illustration of a horse-drawn carriage, likely a motor vehicle from the early 20th century. It features a large, boxy body with a high roof, supported by a frame. The vehicle has large, spoked wheels and a prominent front end with a hood and a small, rounded front. It is shown from a side profile, facing right. The illustration is set within a white rectangular frame, which is part of a larger black graphic element that also contains the text.

Our Homes.

The Workbox.

CHILD'S CROCHETED CAP.
This will fit a child two years old. Heavy yarn will make a larger cap. It is started at the bottom and worked into the point. Procure one skein Shetland flax, and work with a medium-sized bone hook. Chain 90 and join round.

2d round—(*) Work 1 double in each of the 90 stitches of the last double crochets is inserted hook in back part of stitch, draw yarn through, then through 2 stitches on hook.) Working into back part of stitch produces a ribbed effect. Repeat from (*) till 18 rounds are finished.

19th round—Narrow, mark the place (*), 13 double, narrow, repeat from (*) all the way round.

20th round—All double crochets.

Repeat the 19th and 20th rounds till the work is reduced to 12 stitches only. After the first narrowing make 1 stitch less between narrowings each 12 stitches, run the yarn through these stitches, draw up and fasten down on wrong side.

For the border of cap, which is to be turned up on the right side, work on the wrong side of the cap thus:

1st round—Work 1 double in each of 90 stitches; join.

2d round—Chain 3, work 2 treble in same stitch (treble is over one), remove hook, insert in third chain, then in top of last double, catch the yarn and pull up (*), chain 2, miss 1 double in the next double, work 3 double; remove hook, insert it in top of first double, catch into the space between the yarn and draw up. (The yarn must be caught up from the under side of the 3 double.) Repeat from (*) all the way round. Fasten with a slip stitch.

3d round—Work in same way, only make the puff stitch above the puff stitch of last round, and 2 chain above 2 chain.

4th round—(*) Work a shell composed of 7 treble in a space between puffs. Catch down with slip stitch in next space, and repeat from (*) all the way around. Roll up the right side of cap. Fasten down by catching into the space between shells. Now turn over the point and fasten to cap. Finish with a tassel.

To make a cap any size desired measure the child's head, and allow 5 stitches to each inch, making a few stitches more or less to make the number divisible by six.

EVA M. NILES.

How to Use Vegetables.

The most wholesome and economical diet, for half the year at least, demands a free use of fresh vegetables. Its two essentials, however, are not furnished on every farm or in every country home. They are, first, a good garden, and second, a clever and willing cook, who knows how to use vegetables to the best advantage. The garden itself, with its two obvious considerations of quality and quantity, will not consider at present. But taking for granted the excellence of the supply, in what ways can the resourceful cook increase the value of her contribution?

The all-devouring soup kettle has a great appetite for vegetables. Not only a large number of excellent soups get their distinctive character from a vegetable—and these soups are far too much neglected in our American diet—but the combinations are endless. The plainest beef soup is rendered exceedingly savory and inviting by the addition of mixed vegetables, and the use for this purpose of whatever is in season is quite worth a little thought and experimental knowledge. Green peas, asparagus, okra, tomatoes, cabbage, corn, cauliflower, salsify and many others are available for fine soups, having a single vegetable as chief source of flavor. Onion, carrot, parsnip, lima beans, various squashes, celery and radishes, peppers, etc., may be mentioned as highly useful in combining as well as those already spoken of. In fact, there is scarcely any vegetable fit for eating that may not do good service in soup-making.

Some tender young vegetables are best taken whole, leaf and root; such are very small carrots and parsnips, among the best of soup material. Others may be cooked separately in a very little water and added to a clear soup before serving, such as green peas in small quantity, cauliflower broken in tiny sprigs, lima beans, or mixed vegetables cut in rings or fancy shapes.

Of the class of purees made by pressing the vegetable, first boiled very soft, through a strainer, green peas, sweet corn, some of the squashes, and the useful tomato, all make rich and delicious soups. As this class of soups require little meat, it is an excellent way to dispose of the remnants of roast chicken or turkey, veal or lamb. Of course the water in which the bones are simmered is used for cooking the vegetables, but milk is added in making a soup with corn, or for potato or onion soup. Careful seasoning is indispensable.

A little sage or tarragon, not more than a tablespoonful to a quart, boiled with the vegetables, is a useful addition, giving smoothness and a richer taste. Green peppers, of the sweet variety, which is not excessively hot, are very good for flavoring soups, stews and sauces. A little patch of "fine herbs," thyme, summer savory and the like, belongs, by right, to every complete kitchen. A sprig of each of as many kinds as possible forms the "bouquet" indispensable to the French cook, whose highly skilled mingling of many delicate flavors gives an individuality of its own.

Another general use of vegetables lies in the direction of salads. Peas, string beans, or the full-grown lima, beans and a dozen other summer vegetables are invaluable for this purpose. The old-fashioned farmer's table, with a great platter of cold vegetables, potatoes, cabbage, string beans and the much-prized pickled beets, bore witness to the natural craving for food of this kind. Served with salt, pepper, vinegar and mustard, the farmer ate his hearty supper without classifying it. It is an easy matter to cook an extra quantity at dinner time, in order to provide material for serving cold. A simple sprinkling with vinegar and condiments may be liked, or one may indulge in a mayonnaise if that is preferred. These cooked vegetables may be offered with or

without lettuce or raw tomatoes sliced. In fact, the variety in forms of arrangement is simply endless, and variety in this respect adds to their attractiveness.

Then there is another large class of tempting dishes available for supper, breakfast or lunch, to be served hot—the product of the garden. Such are various delicious omelets in which vegetables are important ingredients, roast corn, broiled or baked tomatoes, corn pudding, fried egg plant, corn fritters and many others. Sweet corn is not only among the most nutritious of vegetable foods, but it has a special merit for thin people in its fat-forming tendency. To eat heartily of sweet corn throughout the season, is for some of us a very agreeable way of getting in better physical condition.—Country Gentleman.

Polemia-Poisoning.

This is a term used popularly to designate the symptoms due to poisoning by damaged food. Like many other popular terms, and not a few scientific ones,—it is not strictly correct, for in the great majority of cases of food-poisoning the offending matter is not a poison at all, but a poison elaborated by certain bacteria present in the food. This poison may already exist in the food, or it may be produced in the sufferer's body after the bacteria have been admitted. In other cases (the food has not begun to putrefy, nor has it been contaminated with poison-producing bacilli, but is in itself poisonous. This happens in mushroom poisoning and in poisoning by certain kinds of fish.

Preserved foods—canned, cold-storage, pickled—are those most commonly responsible for poisoning, since the bacteria which make the poison have had plenty of time to develop. The bacteria of putrefaction in spoiled fresh meat are often of a comparatively harmless kind, so far as their effect upon the living organism is concerned, and by their rapid growth they choke the other and more noxious kinds, and prevent their development.

When the food contains ready-formed poisons the symptoms come on soon after eating, and usually disappear rapidly if a fatal ending is averted; but when the food contains noxious bacteria, the symptoms are delayed, and need the conditions found in the living body in order to multiply, a certain period elapses, from several hours to a day or more, before the dangerous symptoms declare themselves.

The symptoms of food-poisoning naturally vary in intensity according to the nature of the poison, its amount, the susceptibility of the individual, and so on. There may be only an acute indigestion, marked by nausea, vomiting and perhaps diarrhea, or the poison may overwhelm the nervous system, causing collapse, convulsions, unconsciousness, paralysis, and then death. The first thing in the way of treatment is to get rid of the offending material by emetics and purgatives, although nature generally attends to that with the first signs of poisoning. After that a cleansing of the intestinal tract from the disease germs may be called for, and stimulants for the flagging heart and the oppressed nervous system.—Youth's Companion.

Lobster a la Newburg.

Split two perfectly fresh, good-sized lobsters. Pick the meat out of the shells and cut it into inch pieces. Have a saucepan on the range, with a heaping tablespoonful of butter. Melt the butter in it and put the lobster into the pan and let it cook for five minutes in the butter. Add some salt and a little red pepper, about half a saltspoonful. If desirable add two medium-sized sound truffles cut into small "dice-shaped" pieces. Add a wineglassful of good Madeira wine. Reduce to one-half, which will take three minutes if the fire is very hot. Have three egg yolks in a bowl with a cup of sweet cream; beat thoroughly together and add it to the lobster. Gently shuffle the pan on the fire for two minutes longer, or until it thickens well. Serve very hot. One of the principal points in preparing lobster a la Newburg is to reduce the wine after it has been added to the dish. It must be reduced one-half, so that the eggs will thicken properly, and it must be stirred all the time it is cooking to prevent any danger of the eggs curdling.—Exchange.

A Plea for Roasting.

It is to be feared that many excellent modes of cooking which prevailed in the past are now abandoned simply to save trouble. The modern cook, or the person who calls herself such, although she may be positively instructed to roast meat in the good old-fashioned way in a screen in front of the fire, commonly ignores her instructions at every possible opportunity, and puts the joint in the oven. The introduction of the "kitchen" or the closed range and of the gas cooker probably accounts for the preference which is given to baking, while it does away with the necessity of roasting and other little but important culinary attentions which roasting involves. There can be little doubt that by this exchange of method not a few persons are dietetic sufferers.

The preference for meat openly roasted before the fire is not a mere sentiment, for the flavor of meat so cooked is infinitely superior and the tissue is generally more tender than when it is baked. Now the flavor and tenderness of meat have much to do with its digestibility, and consequently with its real value as a food. Without reliable and accurate digestion is sluggish and heavy. Indeed, it has been said that the process of digestion commences before ingestion, and certainly the digestive functions are stimulated to healthy activity by the sight of a tender and well-cooked morsel as well as by an excellent flavor or aroma. It has been shown that the mere inspection of good, tempting foods start the digestive machinery and immediately excites the flow of the gastric juice. It is, therefore, not unreasonable to suppose that there must be a difference of some dietetic importance produced in the organism, when on one hand, a baked, heavy looking joint is in contemplation and when on the other, it is a bright attractive-looking, because an openly roasted, joint.

As a matter of fact, there is a great difference between the two methods of cooking, baking and roasting. In the former case the meat in reality is cooked in hot air, which has a tendency to decompose the fat into acid substances. When the door of an oven in which a joint is cooking is opened, the fumes escape, smelling like a tallow candle which has just been blown out. The smell from a joint being roasted has not this character, but, on the contrary, is agreeable. In roasting, the joint is cooked by radiation—that is, by the bombardment, so to speak, of heat waves. The air between the fire and the joint might be quite cool, yet roasting would proceed all the same. Roasting is a less rapid method of cooking than is

baking, and slow cooking has very decided advantages in regard to preserving the nutritive value of the meat. The civilized cook might learn a good deal from the methods of slow cooking adopted by savage tribes.—Lancet.

Breakfast in Persia.

Persians look on fruit as a staple food, and the ordinary meal of the working classes and peasantry is a loaf of bread and a pound or two of grapes or apricots. The author of "In the Land of the Lion and Sun" says that meat is seldom eaten by the poor. He describes some of the favorite foods of the country.

"Meat" is much consumed. This is curried milk, and is made by adding a little curdled milk to fresh milk warmed. It is then left to cool, and the basin of curdled milk sets in a few hours, leaving the cream on the top. For the first twenty-four hours this is sweet and delicious, but as a rule the Persians do not care for it until it has become slightly acid. When in this state about half a pint added to a quart of water forms buttermilk or "dough." A little oil mint is added, and a few lumps of ice, and a cooling drink is made. It is without question a capital thirst-quencher in hot weather.

Cheese, too, is much eaten for the morning meal, with a little mint or a few onions. The banker at Shiraz, to whom the government moneys were entrusted, a rich man, told me that he or any other merchant never thought of any more elaborate breakfast than the sausage before serving. By many this way of serving is thought preferable to that of serving them on toast.—The Epicure.

It is told of a merchant in Ispahan, where they are notoriously stingy, that he pur chased a small piece of cheese at the new year, but could not make up his mind to the extravagance of eating it. So, instead of dividing the morsel with his clerk, as the boy had fondly hoped, he carefully placed it in a clear glass bottle, and sealing the bottle, told the boy to rub his bread on the bottle and imagine the taste of the cheese. This the pair did each morning.

One day the merchant was invited to breakfast with a friend. He gave his clerk the key to his office, and a halfpenny to buy a loaf of bread; but the boy returned, saying he could not get the door open, and although he had bought his bread, could not eat it without the usual flavor of the cheese. "Go, fool," said the merchant, "and rub your bread on the door! It is almost as satisfying as the bottle."

Proper Grief for Widows.

The first convention of the National Milliners' Association has passed into history. At its last meeting the subjects were children's hats, "the bane of the milliner's existence," and mourning hats and bonnets. When Madame Hunt came to the mourning subject she hesitated and looked her audience over for a moment. Then she said:

"Now, I don't want any of you to be offended by what I'm about to say, but if you take my words in the spirit in which they are intended, but I want to make a point of this: If you are a young widow, do not wear a heavy crepe mourning veil or a mourning ruche; neither if you are a milliner must you advise a young widow to wear them. Rather forbid her doing so."

"All her sadness does not obliterate the fact that the heart of the widow is still young, and there is a future. The heavy crepe veil and the widow's ruche are too much of an advertisement."

"These mourning trappings are for the widow with silvery hair, the elderly widow whose life is in the past and who could never be induced to entertain even a thought of a second marriage."

"There are certain rules for mourning to be studied from the very beginning of your business career. First, know your business, that you may be able to tell sincerely the proper thing to be worn under such circumstances. Advise the young widow to wear a veil of nun's veiling, but not crepe, no matter what the style. The creation of a style depends much upon you, anyway."

Let her have a bit of crepe on the bonnet if she wishes, but tell her to wear the first six months, a veil, bonnet or hat and gown of the same general tone and material. Instead of the ruche, let her have a little face veil with crepe bands. But never, never let her have crepe; she won't like it in the end and she does not in the beginning."

"For the elderly widow, the long heavy crepe veil is in keeping. She wears it with dignity, good taste, and also with discretion. "Young or old, a widow should wear a veil for the first few months, but only at the funeral should there be a heavy drape over the face. Never after that day."

"The period of the wearing of mourning gowns should not extend over three months for a child, six months for a young woman, and one, two to three years for a young widow."

Sweetbreads of Veal.

Sweetbreads are only of value for food when the animal is young. There is one in the throat, long and slender, and one near the heart—the pancreas gland. In a grown up these glands have become so hard that they are of no food value. The glands of a calf are preferred to those of a lamb. Heart sweetbreads are much larger and of better flavor than those of the throat. For all purposes of cooking sweetbreads are first blanched. They are soaked for three hours in different waters, one hour in each water, with a pinch of salt in the first, and the water when it is changed. When the sweetbreads are drained they have been soaked and cold water placed on them, heat them until they come to the boiling point, and drain and place them in cold water in a mould with a weight over them. Lard them a little. After this put them in a frying pan with pork skin. Let them simmer in a strong white broth until they have cooked for forty minutes in the oven. The sweetbreads will not color very much, but will be evenly cooked.

Still another method of cooking sweetbreads which have been blanched is to season them with salt and pepper, put a tablespoonful of sweet oil over them and broil them on both sides. Serve them with a little lemon butter squeezed over them.

There are many other ways of cooking sweetbreads, none of which take much time or trouble, providing they have been well blanched at the beginning. They are also prepared as follows: Clean two heart sweetbreads. Cover them with boiling water. Add a tablespoonful of lemon juice, a teaspoonful of salt, a slice of onion and ten pepper corns. Simmer the sweetbreads for twenty minutes in the liquid, then drop them in cold water. Cut bacon in slices as thin as a wafer. Divide these slices into squares. Season the sweetbreads with salt and pepper, and roll them in melted butter and flour. String the bacon and sweetbreads on small skewers, and place them in a hot oven, on a pan, for about ten minutes. Serve each skewer of meat on a slice of toast. Care must be taken not to let the sweetbreads get too firm and hard. Cook them quickly.—Tribune.

Hints to Housekeepers.

Corn cobs are appetizing for either breakfast or luncheon, or may be served as an entree at dinner. Grate enough fresh corn to nearly fill a pint measure. If canned corn is used, press it through a fine colander or sieve. Add the yolk of an egg, beaten light, and salt and pepper to taste. Have ready some very hot butter and just before trying add to the corn mixture the beaten white of the egg, and if the mixture seems dry, a little sweet milk. Drop in small spoonfuls in the hot butter and fry a golden brown.

CHICKEN COQUETTES (ON A BLAZER).
Boil chicken, breastbones, eggs, seasoning (and enough drawn butter to moisten) into pear-shaped balls. Dip them into beaten eggs and breadcrumbs. Put into the chafing dish with enough butter to fry a nice brown.

CHOCOLATE BLANC MANGE.
Dissolve an eighth of a box of gelatine in cold water and stir it into a pint of boiling milk. Weigh the bottom of a tin of condensed milk and add enough chocolate and two ounces of pulverized sugar. Let this mixture boil until the chocolate is melted and a uniform color secured. Then stir in two well-beaten eggs and strain into a mould. Serve with whipped cream.

PINEAPPLE CREAM.
Heat to the boiling point one can of shredded pineapple. Strain half an ounce of gelatine, which has been dissolved in cold water, and add to the pineapple. Remove from the fire, and when it begins to chill stir in the beaten whites of three eggs and half a pint of cream. Pour into a mould and set on ice.

STEWED FRESH MUSHROOMS, DUCHESSE STYLE.
Peel, after washing, a pound of fresh mushrooms, and stew in thick cream, very slowly. Have ready half a cupful of fine breadcrumbs, seasoned with salt and white pepper, and add these to the mushrooms before serving. By many this way of serving is thought preferable to that of serving them on toast.—The Epicure.

CURRIED CHICKEN WITH SPANISH PEPPERS.
Cut a chicken into small neat pieces, and cook till tender in water well flavored with herbs and seasoned with salt and pepper. When done take out the chicken, drain and wipe it dry. Fry till brown in butter, then in the frying pan put a little of the strained liquor in which it was boiled. Thicken this with flour, add curry powder and some canned pimientos chopped to fine bits.

Hints to Housekeepers.

Country sausage meat makes the most delicious forcemeat for stuffing cabbage, onions and various other vegetables.

Bacon grease should never be thrown away as it is a most useful thing. Cabbage chopped very fine and boiled until tender is good seasoned with hot bacon grease poured over it after it has been put in a deep dish. Slices of bacon may be used to garnish this homely but excellent dish.

Corn meal wet in benzine and rubbed over gloves will on the hands is recommended as a method of cleaning them.

Pork chops are delicious breakfast meat, but are not always served with the proper sauces and accompaniments. They may be cooked thoroughly in a saucepan with a scant tablespoonful of butter or broiled over the fire. In either case aim at the design, but this result is produced by griddles or corsets in a diversity of styles and grades. In many cases they match the stock collar and wristbands of the bishop sleeves. Such ends are attached to some of the new griddles that are made of ribbon or feather-stitched silk.

The straight tails of the new Louis XV. cravats are made of real lace or hand-embroidered silk, a narrow line of the lace or embroidery showing at the upper and lower edges of the draped stock.

Jetted fringes border the edges of the brims of many new hats of straw, silk and chiffon.

Large pearl buttons, Mexican drawn work, plain and colored embroideries, and net top trims are used on new spring frocks of linen in coarse meshed, basket-patterns, pin-dotted weaves, barrel, striped, plaited, in bourette weaves, diagonal twills and hair lines in black white, red, brown or ecru.

There is no set fashion in connection with sleeves. Many of the spring shapes are the replicas of the styles of other days. The Stuart, the Tudor and the Priscilla afford good examples of picturesque styles, and even earlier fashions in sleeves reappear. There are also French, Dutch, Russian and Austrian shapes on expensive imported models. Snugglers from the shoulder down is, however, the ruling effect, no matter what model is used for the rest of the sleeve.

From the elbow it flows in ruffles, plaited or gathered; if it is puffed, banded, slashed, drooped or draped. Wing or "angel" sleeves are attached to tea gowns, negliges, dinner jackets and a number of evening gowns of light material or silk or brocade trimmed with lace or chiffon.

Handsome glimps, arabesque bands and applique trimmings showing a mixture of very fine gold and silver cords and threads are used on expensive reception and dinner costumes of tan, frost gray, fawn, brown, blue or green cloth. Some of these decorations are gold and silver alone, others are jeweled or spangled. Among some gowns imported to wear at a fashionable church wedding was one of nun's gray kid finished cloth, with trimmings of very narrow sable bands and fine gold and silver passementerie. There was a deep yoke effect of the embroidery on the bodice, ending in a tiny fur roll, and the drooping bishop sleeves had a delicate arabesque embroidery at the wrists, with fur each side of the band. Small gold and silver medallions with fringed ends finished each of the tabbed strapings on the five-gored skirt, which was lined with gray taffeta soysene.—New York Evening Post.

Fashion Notes.

The shirred dress skirt, the long shoulder effect, the gridded blouse jacket, the stole-front petrie, the hip yoke and the sleeve with its fullest lower elbow, press to the fore the prominent features of dress for the spring and summer.

"Santuzza" jackets and aprons are quaint additions to the morning dresses for home wear. They imitate the small garments worn by the heroine in "Cavalleria Rusticana," and are made in silk, satin, or trimmed with lace. The wide cape collar is covered with bright embroidery with lace. The embroidery is done in Oriental effects, in gay butterflies, red birds, grapes, red and yellow cherries, and the like.

Irregular knots of silk in various colors, as well as in black or white, appear on the surface of thin woven, canvas-like dress stuffs, and for the summer, beach and mountain suits, and for the autumn, costume trims and small gimp buttons and taffeta silk strapings that match the silk knot in color.

Taffeta silk capes, gored and shirred around the shoulders, are among the imported small wraps, finished with long stole ends. Colored veils, shawl and shawl, and the shawl of tan, champagne and fawn color, is another material that appears on caps of various kinds, and matching net-top silk fringes or ecru lace frills are the trimming. A French model of soft gray taffeta, shirred to the shoulders closely, is finished with an accordion-plaited frill of gray chiffon, edged with a ruche. The stole that encircles this collarless cape is covered with an embroidery of steel and jet, with matching fringe at the ends. The yoke portion of some of the capes is covered with an open lattice work of jet, enriched here and there with grape and rosette designs. In some cases this open-work is laid over color, or chiffon or Chantilly lace frills, or sometimes lace, fall below this yoke. A toy wrap in fawn shape, grading to a point at the back, is of jetted all-over, in blackberry and foliage patterns. This is laid over rose-colored satin, gleams of which show delicately through the meshes of the silk net background. The usual skirt are on the front, and the cape is edged with a net plating that is, in turn, edged with a ruche.

Cluny lace is popular this season, both in narrow band and border insertions, and separate applied motifs. Black Cluny lace in effective patterns decorates many of the visiting and dinner gowns of black and white satin foulard, taffeta and peau de Diane. Cream white and ecru medallions and strapings of this lace are used on blouses and shirt waists of butchers' linen, linen lawn, white pongee, India mul and Liberty silk.

An unusual amount of embroidery is used on the new tailor made shirt waists of either wool silk and wool or mercerized fancy cottons. Fawn, champagne and almond tints in Shantung, peau de sole, pongee and taffeta are in marked favor for these waists, and the Persian embroidery added to them, brighten these neutral colors, and also make them much more becoming.

French gowns are shown at the importing houses, made of crepe de chine, with wide borders of taffeta flower work wrought on net or antique lace. Narrower bands are enriched with Venice lace medallions in colors of old blue, tea rose, pink, mauve or sea green. Sometimes the

medallions of flax net and Flemish patterns in cream or ivory white, have blue, green or rose-colored silk or chiffon laid beneath the oval motif, the color showing faintly through the transparent centre of the medallion. Cream satin bands are embroidered in fashions and sweet peas and leaves in raised designs; brilliantly colored humming birds are wrought on ecru silk grounds, and cape collars of ecru linen bordered with Russian gulpure lace, are further ornamented with small French knots in black silk and a sprinkling of minute gold spangles.

Some of the new top coats and blouse jackets of the spring season are improved by the addition of circular shoulder capes with stole ends. One Paris model of black taffeta silk has a shoulder cape decorated with Russian gulpure applique bands. A rather deep close-fitting peplum gives length to this model. This is adjustable, a narrow curved belt of stitched silk covering the jointing of the blouse jacket and the peplum. The sleeves are in bishop form and the wrap is collarless. Another model, in fawn-colored Melton, has the shoulder-cape finish, but the lower edge of the blouse ends are caught in with the belt. The sleeves are in open-folding style, and the peplum finish below the waist is omitted.

There is this season an unprecedented demand for hand-made garments and hand-wrought embroideries of every description. This is particularly noticeable among the novelties in spring summer neckwear, expensive fancy waists and chemises and berthes of every shape and style. Another feature is the adaptation of clerical effects in collars and waists for both day and evening wear. The effects include bishop tabs, stole fronts, loose-flowing sleeves, embroidered strapings and costly lace appliques and medallion bands.

Tambour lace is used frequently on both day and evening gowns, in the form of bands, flous and flounces, and the old-time lace scarfs are used for stoles or arranged in peplum style on the skirt, forming a point in front and at each side.

Pendants of ribbon terminating in small flower-like ornaments, twisted lengths of tinted chiffon with tea rose buds or sweet peas made of the chiffon and fastened at the extreme ends, also tassels, spikes and fringes in all colors as conspicuous features of trimming for the spring and summer. In black the ribbon roses and buds are used on round hats of black satin braid with black net or mouseline de soie.

Sleeves are likely to remain in their present form for the two seasons before us. Their accepted outline is, however, abnormal. None of the shapes follow the natural contour of the arm. They are not becoming to women with long thin arms; nor to those whose arms are short and large. The wide voluminous fullness drooping from the elbow down, is much more trying than when this drapery fell to the elbow from the shoulder. But the pagoda, the bell, the flare, the leg-of-mutton, Queen Bees, and all the other baggy, flowing styles, are in the highest fashion.

The pronounced dip front, that has been a feature of blouses, fancy waists and shirt waists of every description, is not seen on any of the new Paris-made models. The waist still curves down a little longer in front than at the back, but no such fullness is seen below the belt line as has been allowed for many seasons past. To give an effect of length just here is, however, still the aim of the designer, but this result is produced by girdles or corsets in a diversity of styles and grades. In many cases they match the stock collar and wristbands of the bishop sleeves. Such ends are attached to some of the new griddles that are made of ribbon or feather-stitched silk.

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The World Beautiful.

Lillian Whiting, in Boston Budget.

"All goes to show that the Soul in man is not an organ, but it animates and exercises all organs; is not a function, but uses these as hands and feet; is not a faculty, but a light; is not the intellect or the will, but is the master of the intellect and the will; is the background of our being in which they lie,—an immensity not possessed and that cannot be possessed. . . . We know that all spiritual Being is in man. . . . There is no bar or wall, especially in the soul when man, the effect, ceases, and God, the cause, begins. The walls are taken away. We lie open on one side to the depths of spiritual nature, to the attributes of God."—Emerson, in "Over-Soul."

"Human Personality and Its Survival of Bodily Death" is the title of one of the most important and epoch-making books that have ever appeared entering as a new force into life. For many years this great work of Mr. Frederick W. Myers has been anticipated, and its completion (since the death of Mr. Myers in January of 1901) has been in the hands of Dr. Richard Hodgson. The London and New York house of Longmans, Green & Co. bring out this monumental work in two volumes, and the reader finds in it a searching study of the very nature of life as valuable to the present hour as it is illuminating on future destiny. In the opening of the book we find Mr. Myers saying:

"In the long story of man's endeavors to understand his own environment and to govern his own fates, there is one gap or omission so singular that, however we may afterwards contrive to explain the fact, its simple statement has the air of a paradox. Yet it is strictly true to say that man has never yet applied to the problems which most profoundly concern him those methods of inquiry which have been the most effective. The question for man most momentous of all is whether or no he has an immortal soul; or to avoid the word 'immortal,' which belongs to the realm of metaphysics—whether or no his personality involves any element which can survive bodily death. In this direction have always lain the gravest fears, the farthest-reaching hopes, which could either oppress or stimulate mortal minds."

On the other hand, the method which our race has found most effective in acquiring knowledge is by this time familiar to all men. It is the method of modern Science—that process which consists in an interrogation of Nature entirely

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dispassionate, patient, systematic; such careful experiment and cumulative record as can only elicit from her slightest indications her deepest truths. That method of research, so often indicated to the civilized world; and so often in many directions experiments may be difficult and tedious, facts rare and elusive. Science works slowly on and bides her time,—refusing to fall back upon tradition or to launch into speculation, merely because tradition is the claim request; leads to valid discovery, indisputable truth.

"I say, then, that this method has never yet been applied to the all-important problem of the existence, the powers, the destiny of the human soul."

Mr. Myers bases this entire work on the conviction that "If a spiritual world exists,—and if that world has at any epoch been manifest, or even discoverable, then it ought to be manifest or discoverable now." He notes that "at no time known to us,—whether before or since the Christian era, has the series of trance manifestations of supposed communications with a supernatural world—entirely ceased." Instancing the "exceptional trance-history of Sweden

DYSPEPSIA

Geo. S. Scully of 75 Nassau St., New York, says: "For years I have been troubled with dyspepsia, and I came to the conclusion that I was suffering from it. I immediately found great relief from your pills. I feel like a new man since I commenced taking them, and would not now be without them. The drowsy, sleepy feeling I used to have has entirely disappeared. The dyspepsia I am satisfied if any one so afflicted will give Radway's Pills a trial they will surely cure them, for I believe it all comes from the system being out of order—the liver not doing its work."

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Poetry.

WHEN SLEEP BEGINS TO RUN.

Now it's time to overhaul the buckets, spoons and gathering pan. For sugaring time is near at hand. Look up the bit and nails, Put all the holders in good shape, evaporators, too—Clean up the pans and sugar-house, the whole outfit clear through. For it pays to be already when the sweet time comes around, And the juice begins to travel up the maples from the ground. Then it's bustle, bustle and bubble, busy time and lots of fun, Up and down the sugar orchard when the sap begins to run.

I. I have merry recollections of the big old-fashioned yoke We gathered sap with years ago; our backs it nearly broke. Loaded down with yoke and snowshoes, we would start out very early. But often flumped and lost our sap when the crust slipped to hold. On three stones an iron kettle was the sugar-house we had. From the fire built around it came a smoke to drive you mad. But when the sugaring-off came round we always had great fun. And great appetites for sugar while the sap kept on the run.

II. When nights are keen and frosty, followed by warm sunny days, Is the proper sugar weather, and the kind your labor pays. And when the "sugar snow" comes down you hail it with delight, For sap will run like "sugar"—keep your boiling day and night. But it isn't quite so pleasant with the sap mixed up with rain. As such a mixture falls to "sugar" a sugar of good "grain." Yet the harvest comes "between times," and when the sugaring's done, You will have some ready money—if the sap has been briskly run. JAMES D. KIMBALL, Northampton, Mass.

MY GENTLEMAN.

I own a dog who is a gentleman: By birth most surely, since the creature can Boast of a pedigree the like of which Holds not a Howard or a Metternich. By breeding. Since the walks of life he trod, He never snubbed an unkempt lad abroad. He never snubbed a nameless cur because Without a friend or credit card he was. By pride. He looks you squarely in the face Unshrinking and without a single trace Of either diffidence or arrogance. Assertion such as upstarts often flaunt. By tenderness. The littlest girl may tear With absolute impunity his hair, And pinch his silken, flowing ears the while He smiles upon her—yes, I've seen him smile. By loyalty. No truer friend than he Has come to prove his friendship's worth to me. He does not fear the master—knows no fear—But loves the man who is his master here. By contentment. If there be nobler eyes, More full of honor and of honesties, In fiercer head, on broader shoulders found—Then have I never met the man or hound. Here is the motto on my lifeboat's log: "God grant I may be worthy of my dog!" —New Orleans Times-Democrat.

ZIGZAGGED.

The rain is gone, but the leaves are wet, The long spathes where the buds are set; Summer shall wear what the springtime weaves In her green, green bowers of leaves. Dim are the stars, though the moon rose bright; My chamber is full of the sweet spring night. The dusk spring night and its scented gloom— Blue dusk and the lilac-bloom. The heart of youth and the House of Dream, They are here once more while the spring stars gleam. The palace towers of the Eastern tale, Fell not till the dawn grew pale. See how their casement, amber bright, Hangs in the wall of the dark spring night; The gypsy halts by the lighted pane— And then to the road again. —Rosalind Marriott Watson, in The Athlete.

GOSPEL OF THE FIELDS.

Have you ever thought, my friend, As duty you told and then I said, In the noisy paths of men, How still are the ways of God? Have you ever paused in the din Of traffic's insistent cry To think of the calm in the cloud, Or the peace in your glimpse of the sky? Or in the growing fields That quietly yield you meat, And let them rebuke your noise Love—merciful—forgiving. Forget that silence is best! —Arthur Upson.

The wild rose may caress you And crimson o'er the dew; But with no love to bless you The rose is dead to you. Sing sweet for love and living Love—merciful—forgiving. Makes life forever new! —Atlanta Constitution.

Miscellaneous.

Aunt Jane.

"Anything exciting in your letters this morning, dear?" "Well, I don't know," said Lucy; "here's a letter from Aunt Jane." "Aunt Jane?" he said. "I never met Aunt Jane before we married?" Lucy got up and went round the breakfast table looking troubled. "Tom, dear, you remember that day you asked me to be your wife?" "Yes," he replied. "Why, what's the matter?" "You remember I said I had a awful sin to confess—a past, a present and a future; something you might never be able to forgive?" "Yes, I wouldn't listen," he put his arm round her. "Well, it was—it was Aunt Jane."

"Great Scott!" he replied. "Was it as bad as that? But I don't remember having heard of her?" "No, I kept her away—in a cupboard. I know it was wrong of me. She didn't write to congratulate or anything, even on our wedding day, so I thought it might be all right. I quite hoped she would never forgive me, or I would have told you before, I really would."

"Who is she, and what does she do?" "She says visits, chiefly. And she says here that she may forgive me." "She hasn't actually done so?" "No." "Then why despair?" He cheered up. "No, but she says that, though I have married an abominable man—"

"You mean to say you've never told her you've married an angel?" "No. Would it be quite true?" she asked, simply. "Only three months married, and you ask that?" "Well, she says that, in spite of it, she won't be too hard on me till she has seen you herself; that she thinks it is a great mistake that young wives should ever be left alone with their husbands; that I shall always find her house a refuge and asylum when I want it."

"A asylum!" he echoed. "Oh, is that the trouble?" "I don't think she means that exactly," said Lucy; "but listen—this is the last sentence. 'I feel that I ought to do all I can to brighten your life, so I will come on Wednesday to stay a week or two.' Aunt Jane's invitations always were so indefinite. She always left a loophole for weakness." Lucy put the letter down and sighed. "Only once that I can remember did she go within a month of the time that she came for, and then it was because Willy broke out all over in spots. She always had a horror of anything with spots ever since her gardener was eaten by a leopard."

"Today is Wednesday," said Tom, gloomily. "Darling," she cried, "I shall never forgive myself for bringing this upon you!" "It's not your fault altogether," he replied; "few of us can choose our aunts." "Oh, there's a postscript!" she exclaimed. "Of course, the length of my visit will depend on the character of the man who has deluded you."

"Humph!" said Tom, "that's ambiguous. Will she go because I'm good and she can trust you to me, or because I'm bad and she can't stand me?" "I'm sure I don't know," said Lucy. "Oh, here's another postscript. 'You will kindly remember my weakness for a hot water bottle.'"

"That throws no light," he said. "What am I to do?" "Never mind, darling; we must bear it together," he clasped her fondly in his arms. "Would you still have married me," she asked, timidly, "if you had known of this dreadful thing?" "Yes, dear," he replied with emotion. "I am as bad as you are; you have yet to meet my Uncle George." And he hurried off to his work with guilty haste, before she could ask any questions.

Aunt Jane arrived, as threatened, punctually a quarter of an hour late. She was always a quarter of an hour late, on principle. It arose out of a dislike for being kept waiting when asked out to dinner, for instance, and rapidly spread over the whole of her movements, owing to her morbid passion for regularity. To be late for breakfast and in time for luncheon upset her for a week, and she was scrupulously up for everything. This was annoying, unless you knew her and allowed for it; but she was most of the things Aunt Jane did. She was small, but enjoyed a deep bass voice.

"Ah, my poor child," was her greeting, "how ill you are looking!" "I didn't know," said Lucy meekly. "Never mind, never mind; you've nobody to blame but yourself, and you've got to make the best of it. Give me some tea, child." She folded her veil and sat down with an air of pity. "Put the sugar in first, then the tea, and then count five slowly before adding the milk." "Yes, aunt," Long habit had taught absolute submission. "And now tell me," said Aunt Jane, after a few minutes general conversation, "does he yet use actual violence to you?" Lucy looked at her in astonishment. "Don't be afraid to tell me all, child; always tell all the truth to your doctor and your aunt. I have come here to cheer you up."

"I don't understand," she said. "Aunt Jane, I don't understand you. I don't know what you mean. I don't know what you are talking about. I don't know what you are doing. I don't know what you are saying. I don't know what you are thinking. I don't know what you are feeling. I don't know what you are wanting. I don't know what you are needing. I don't know what you are hoping. I don't know what you are dreaming. I don't know what you are wishing. I don't know what you are praying. I don't know what you are believing. I don't know what you are doing. I don't know what you are saying. I don't know what you are thinking. I don't know what you are feeling. I don't know what you are wanting. I don't know what you are needing. I don't know what you are hoping. I don't know what you are dreaming. I don't know what you are wishing. I don't know what you are praying. I don't know what you are believing. I don't know what you are doing. I don't know what you are saying. 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